

August 24, 2009  
File No. 21.0056192.10

Mr. Glenn May  
NYSDEC Region 9  
270 Michigan  
Buffalo, New York



Re: Results of July 2009 Natural Attenuation Groundwater Sampling  
Delphi Thermal Systems Facility  
Lockport, New York  
Registry Site #932113

Dear Mr. May:

GZA GeoEnvironmental of New York (GZA) prepared this letter report to summarize the results of the July 2009 special comprehensive groundwater sampling and natural attenuation parameter monitoring event at the above referenced Registry Site. The groundwater sampling events discussed in this letter report were conducted from July 15<sup>th</sup> through July 20<sup>th</sup>, 2009.

The July 2009 groundwater sampling event was completed based on the recommendation GZA made in our April 20, 2009 letter report to you regarding the results of the November 2008, February 2009 and March 2009 groundwater sampling events which identified the following.

- In February 2009, sample results for MW-14 indicate that trichloroethylene (TCE) was present at a concentration of 0.016 mg/L, which is above its New York State Department of Environmental Conservation (NYSDEC) groundwater standard of 0.005 mg/L. This was the first time that TCE was detected above method detection limits at this location since the monitoring well was installed in 2001.
- The March 2009 sample results from MW-12 confirmed the increased levels of contaminants, total-1,2-dichloroethylene (1,2 DCE; 0.150 mg/L) and vinyl chloride (VC; 0.081 mg/L), from the November 2008 sampling event. Also, TCE (0.005 mg/L) and tetrachloroethylene (PCE; 0.002 mg/L) were detected above method detection limits in the March 2009 sampling event for the first time at this location, which has been monitored since 1997.

Based on the above mentioned findings, we recommended a special comprehensive sampling event be conducted at the Site to evaluate if conditions in the central portion of the groundwater plume (MW-4, -8, -9, and -10) are changing and having an effect on the downgradient wells (MW-11, -12, -13, -14 and -15). The July 2009 sampling event included monitoring well locations: MW-4, -7, -8, -9, -10, -11, -12, -13, -14 and -15 which were sampled for volatile organic compounds of concern and natural attenuation

535 Washington Street  
11th Floor  
Buffalo, New York  
14203  
716-685-2300  
FAX 716-685-3629  
www.gza.com

parameters.

This work was completed in accordance with the NYSDEC approved Site Management Plan,<sup>1</sup> which includes an Operation, Maintenance & Monitoring Plan (OM&M Plan). The referenced Site Management Plan will be incorporated in a future Order on Consent to implement the NYSDEC March 2005 Record of Decision for the Registry Site.



## GROUNDWATER MONITORING & SAMPLING

### METHODOLOGY

The natural attenuation monitoring and groundwater sampling was done using low flow sampling techniques. A peristaltic pump, disposable polyethylene tubing and a water quality meter with flow through cell, were used to collect water quality readings and groundwater samples. The sampling technique and analytical parameters were consistent with previous sample rounds as identified in the OM&M Plan.

**Field Measured Parameters:** temperature, specific conductance, pH, turbidity, dissolved oxygen (DO) and oxidation reduction potential (ORP).

**Compounds of Concerns:** tetrachloroethylene, trichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene and vinyl chloride.

**Natural Attenuation Parameters:** methane, dissolved iron, dissolved magnesium, dissolved manganese, dissolved potassium, dissolved sodium, alkalinity, total organic carbon, chloride, ammonia, nitrate, nitrite, sulfate and sulfide.

Groundwater pumping rates used during the monitoring/sampling varied at the monitoring locations in order to establish a relatively constant head during the pumping/monitoring. Once a constant head was established within the monitoring well, the flow rates were maintained during the monitoring/sampling period. The Monitoring Well Observations & Groundwater Sampling Logs are included in Appendix A. Samples were collected for analysis once a constant flow was established, water quality readings stabilized and after a minimum of at least one well volume were purged.

### ANALYTICAL RESULTS

Groundwater samples were collected and analyzed for chlorinated compounds of concern (COC) and natural attenuation parameters similar to previous sample rounds as identified in the August 2007 Site Management Plan. Results for the compounds of concern are shown on Figure 1 along with the data from previous sample rounds. Results of the

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<sup>1</sup> "Site Management Plan, Delphi Thermal Systems Site, Lockport, New York, Site Number 932113" dated August 2007. Prepared for the New York State Department of Environmental Conservation, prepared by GZA GeoEnvironmental of New York. GZA File No. 21.0056192.10



natural attenuation parameter monitoring are shown on Table 1 along with the data from previous sample rounds. The laboratory report is included in Appendix B of this letter report.

#### Compounds of Concern



- MW-4: The results indicate a decrease in the COC since the previous sampling event conducted at this location in April 2003.
- MW-7: The results indicated a slight increase in the PCE and TCE concentrations and the concentrations of 1,2-DCE and VC are relatively the same.
- MW-8: The results indicate a decrease in the COCs since the previous sampling event conducted at this location in October 1999.
- MW-9: The results indicate an increase in PCE and TCE, little change in 1,2-DCE concentrations, and a slight decrease in VC concentrations. However, the order of magnitude of the detected concentrations of COCs is generally consistent with the previous sampling events conducted at this location in 2001.
- MW-10: The results indicate a general decrease in contaminant concentrations. However, the order of magnitude of the detected concentrations of COCs is generally consistent with the previous sampling events conducted at this location in 2001.
- MW-11: The results for the COC were below method detection limits.
- MW-12: PCE and TCE were both detected for the first time at this location in the March 2009 sampling event. Both these compounds were below method detection limits in this July 2009 sampling event. The results of 1,2-DCE and VC confirm a slight increase in the concentration of these two compounds in the recent sampling events. However, the detected concentrations are similar to those detected in the 1997 and August 2001 sampling event.
- MW-13: The results for the COC were below method detection limits consistent with previous sampling events dating back to 2001 when the monitoring well was installed.
- MW-14: The results confirm the detected concentration of TCE at this location which was detected for the first time above method detection limits in the February 2009 sampling event at this location. There was also an increase in the detected concentration of 1,2-DCE from the previous sample rounds. The results for PCE and VC were below method detection limits.

MW-15: The results indicate a slight increase in the PCE concentrations from previous three sample rounds but consistent with the concentrations detected in the 2001 sampling events. Concentrations of TCE, 1,2-DCE and VC were below method detection limits consistent with previous sample rounds.



#### Natural Attenuation Parameters

In general, the natural attenuation parameters were consistent with previous sample rounds and are indicative of favorable conditions for natural attenuation (see Table 1). It should be noted that the dissolved oxygen levels for the ten monitoring wells were high when compared to the previous sampling events. It is GZA's opinion that the dissolved oxygen sensor may not have been functioning properly.

#### **RECOMMENDATIONS**


GZA recommends continuing the annual groundwater sampling event, but monitoring the ten wells (MW-4, -7, -8, -9, -10, -11, -12, -13, -14 and -15) as done in this July 2009 event. The groundwater data did not indicate a significant change in groundwater conditions that could account for the recent (2007 and 2008) increases in some of the COCs in the downgradient monitoring locations (MW-12, -14 and -15). It should be noted that the recent increases in the COC concentrations detected in MW-12 and MW-15 do not exceed the highest concentrations detected at those locations to date.

The detected concentrations of TCE and 1,2-DCE at MW-14 may warrant the installation of an additional downgradient well to the east along Upper Mountain Road, if groundwater concentrations continue to increase.

Please do not hesitate to contact the under signed if you have any questions or require any additional information.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

  
Christopher Boron  
Senior Project Manager


  
Ernest R. Hanna, P.E.  
Principal

Table 1 – Natural Attenuation Parameter Results

Figure 1 – Site Plan & Compound of Concern Analytical Data

Appendix A: Monitoring Well Observations & Groundwater Sampling Logs

Appendix B: IsleChem Analytical Laboratory Report

cc: Mr. Richard Eisenman (Delphi, Rochester)  
Ms. Cathy Ver (Delphi, Lockport)



## **TABLE**

**Table 1**  
**Summary of Groundwater Field Measurements and Analytical Test Results for Natural Attenuation Parameters**  
**July 2009 Groundwater Sampling**  
**Delphi Thermal Systems**  
**West Lockport Complex**  
**Lockport, New York**

Location	Sample Date	Field Parameters						Analytical Test Results - Inorganic and Miscellaneous Water Quality Parameters																					
		Temp. (Deg. C)	Specific Cond. (mS/cm)	DO (mg/l)	ORP (mv)	pH (Std Units)	Methane (mg/l)	Organic Carbon (mg/l)	Alkalinity (mg/l)	Ammonia (mg/l)	Chloride (mg/l)	Nitrate (mg/l)	Nitrite (mg/l)	Nitrate Nitrite (mg/l)	Sulfate (mg/l)	Sulfide (mg/l)	Calcium (mg/l)	Dissolved Calcium (mg/l)	Iron (mg/l)	Dissolved Iron (mg/l)	Magnesium (mg/l)	Dissolved Magnesium (mg/l)	Manganese (mg/l)	Dissolved Manganese (mg/l)	Sodium (mg/l)	Dissolved Sodium (mg/l)	Potassium (mg/l)	Dissolved Potassium (mg/l)	
MW-4	12/2/1998	14.2	2,730	0.23	-56	6.6	2.9	19	354	1.23	986	0.30	<0.05		120	0.2	503	443	0.58	0.51	105	106	0.40	0.32	282	293	13.3	12.8	
MW-4 DUP	12/2/1998	NA	NA	NA	NA	NA	5.5	8	368	1.57	971	0.05	<0.05		120	0.2	431	335	0.59	0.52	107	100	0.39	0.34	282	306	13.2	13.5	
MW-4	10/7/1999	13.8	3,412	0.08	-92.8	6.7	4.2	47	360	1.03	1,010			0.08	110	0.3	269	318	0.42	0.45	98	116	0.23	0.34	240	305	10.4	13.1	
MW-4	8/9/2001	12.6	3,420	0.12	-5.1	6.5	0.12	20.2	366	1.20	1,300	0.11	<0.05		190	0.2	371		1.01		107		0.54		384		12.7		
MW-4	10/31/2001	13.8	3,444	0.10	-128.0	6.6	3.3	10.8	366	1.17	1,100	<0.05	<0.05		160	1.2			0.77		102		0.46		358		12.3		
MW-4	7/20/2009	17.7	12,630	3.12	35.1	6.41	5.28	13	330	3.83	5,320	<0.6	<0.6		295	2.0				3.21		193		2.64		2,100		50.5	
MW-7	12/3/1998	17.3	3,130	0.33	-35	7.0	0.06	36	376	1.43	944	0.29	<0.05		200	0.4	382	375	0.14	0.02	118	136	<0.01	<0.01	288	351	20.5	23.0	
MW-7 <sup>3</sup>	10/7/1999	19.4	3,049	0.69	-52	7.1	0.02	58	420	1.10	1,180			0.11	180	0.4	286	255	0.86	0.05	138	145	0.05	0.02	292	306	21.4	24.0	
MW-7	10/25/2006	17.4	2,620	1.08	-92	7.1	0.06	28	376	1.33	600	<0.05	<0.05		470	<0.01			0.23		112		0.02		237		19.4		
MW-7	11/29/2007	15.5	2,162	0.83	-195	7.2	0.13	14	322	1.14	430	<0.05	<0.05		519	0.8			0.58		98.5		0.05		278		20.7		
MW-7	11/4/2008	16.2	3,152	0.33	-80	6.8	0.11	4.4	348	0.08	980	<0.05	<0.05		23	<0.1	327		6.06		74		2.28		277		4.39		
MW-7	2/24/2009	13.1	1,718	1.22	-68	7.3	0.04	NM	270	0.98	410	<0.05	<0.05		430	<0.1	193		0.09		86.7		0.04		213		14.2		
MW-7	7/20/2009	16.4	2,558	10.14	32	7.1	0.07	28	310	1.28	452	<0.6	<0.6		460	2.4				0.03		84.9		0.03		230		24.1	
MW-8	12/2/1998	16.7	3,210	0.90	-68	6.9	0.09	12	300	0.40	138	<0.05	<0.05		550	0.2	215	227	0.33	0.17	76	78	0.31	0.32	102	114	6.31	6.67	
MW-8	10/7/1999	19.7	1,640	0.08	-116.1	7.1	0.04	19	280	0.33	144			0.10	570	0.3	174	188	0.22	0.15	82.4	97.5	0.30	0.31	112	110	7.6	8.1	
MW-8	7/15/2009	16.3	2,408	2.28	-48.6	6.9	2.0	22	300	0.76	457	<0.6	<0.6		588	2				0.03		102		0.40		246		15.7	
MW-9	12/2/1998	16.2	7,150	1.6	120	6.9	0.04	3	309	0.23	640	0.25	<0.05		680	<0.1	330	300	0.33	<0.01	89	84.5	1.74	0.93	444	445	5.52	5.91	
MW-9	10/5/1999	18.7	4,042	0.08	103.5	6.9	0.02	24	330	0.20	963	0.46	<0.05		520	<0.1	250	283	0.20	0.02	63.8	89	1.36	0.99	476	535	4.6	26.5	
MW-9 DUP	10/5/1999	NA	NA	NA	NA	NA	0.02	27	340	0.14	833	0.63	<0.05		490	<0.1	252	284	0.20	0.02	72	86	1.46	0.94	478	560	5.0	5.6	
MW-9	7/20/2009	17.8	8,381	4.75	109.1	6.7	0.03	17	290	0.26	3,100	<0.6	0.9		379	1.2				<0.01		117		0.31		1,600		19.0	
MW-10	12/1/1998	14.5	4,100	0.40	-13.7	6.7	0.23	11	320	0.32	1,220	0.19	<0.05		270	0.2	310	305	1.95	0.76	54.6	85.5	2.30	2.07	584	645	13.4	13.2	
MW-10	10/5/1999	14.2	4,775	0.07	-2.0	6.8	0.14	24	280	0.29	1,010	0.15	0.10		240	<0.1	39.8	254	0.73	0.04	9.94	102	0.99	1.12	33.2	635	18.8	10.1	
MW-10	8/9/2001	12.2	5,033	0.17	249.1	6.6	0.018	10.0	334	0.16	1,700	0.08	<0.05		330	0.1	330		0.14		98.9	99.6	1.66		857	845	9.2		
MW-10	10/31/2001	14.4	3,990	0.15	90.9	6.7	0.20	3.6	336	0.12	2,800	0.17	<0.05		280	1.6			0.05		92.1		0.91		720		7.6		
MW-10	7/15/2009	13.2	9,579	8.7	79.6	6.6	0.36	33.0	330	0.27	4,260	<0.6	<0.6		276	0.8				0.08		103		2.63		1,950		21.1	
MW-11	12/1/1998	11.9	4,360	0.22	-271	7.6	0.01	17	275	0.58	188	0.17	<0.05		110	0.2	122	97.3	1.00	0.26	39.0	36.4	0.11	0.08	116	129	8.88	10.1	
MW-11	10/5/1999	11.9	5,228	2.34	-231	7.7	0.05	20	270	0.76	192	0.05	<0.05		210	0.5	93.4	150	0.34	0.30	46.4	103	0.08	0.08	180	695	10.9	27	
MW-11	8/8/2001	10.4	3,576	0.12	-73.6	7.4	<0.002	12.0	285	0.46	250	<0.05	<0.05		140	0.1	111		0.14		43.2		0.12		130		8.0		
MW-11	10/30/2001	12.0	4,126	0.04	-248.8	7.5	<0.002	3.1	265	0.46	230	<0.05	<0.05		110	2.8			0.02		38.7		0.41		120		9.1		
MW-11	10/24/2006	13.1	800	1.61	-106	7.3	0.008	1.9	341	0.12	108	0.16	<0.05		66	<0.1			0.80		30.7		0.08		85		7.6		
MW-11	11/28/2007	10.7	1390	0.38	-309	7.2	0.008	3.0	233	0.38	410	0.18	<0.05		144	1.0			0.74		42.1		0.08		235		12.3		
MW-11	11/4/2008	14.4	1,377	0.56	-200	7.3	0.005	2.38	249	0.28	200	<0.05	<0.05		101	0.2	95.6		0.38		38.8		0.08		134		8.4		
MW-11	7/16/2009	13.7	1,143	3.8	-15.2	7.3	0.019	16.00	260	0.45	246	<0.6	<0.6		112	2.0				0.11		41.3		0.11		138		11.4	

- Notes:
1. In general the field parameters were stable with very little variation. However, as noted, some readings varied.
  2. Readings were collected using a low flow peristaltic pump and water quality meter with flow through cell.
  3. Results shown for MW-10 are the higher of the results from the sample designated MW-10 or its duplicate sample (Delphi MW-DUP).
  4. < - Indicates compound not detected above the specified detection limit.
  5. Blank = Not tested.
  6. NM = not measured



**Table 1**  
**Summary of Groundwater Field Measurements and Analytical Test Results for Natural Attenuation Parameters**  
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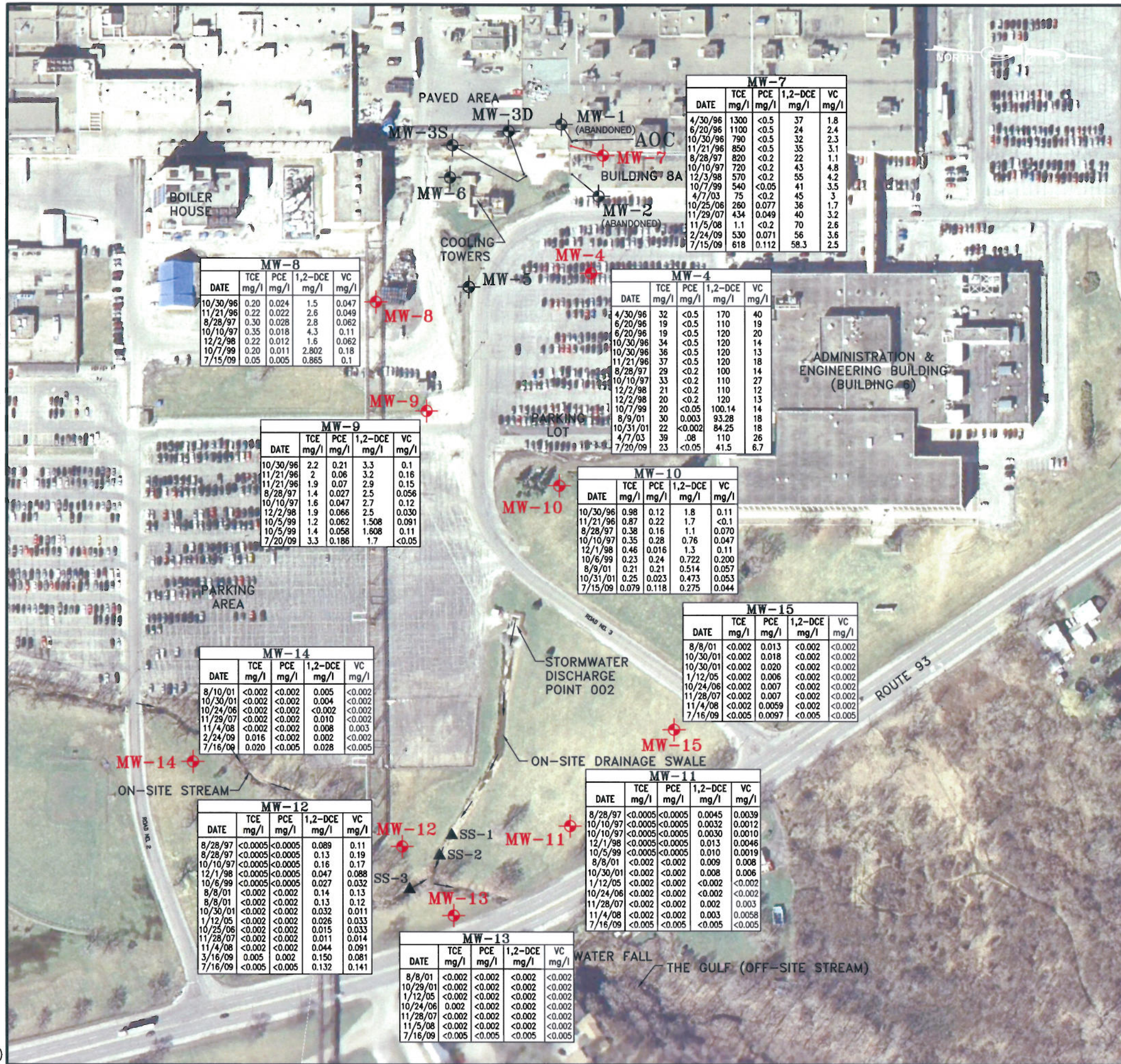
Location	Sample Date	Field Parameters						Analytical Test Results - Inorganic and Miscellaneous Water Quality Parameters																				
		Temp. (Deg. C)	Specific Cond. (mS/cm)	DO (mg/l)	ORP (mv)	pH (Std Units)	Methane (mg/l)	Organic Carbon (mg/l)	Alkalinity (mg/l)	Ammonia (mg/l)	Chloride (mg/l)	Nitrate (mg/l)	Nitrite (mg/l)	Nitrate Nitrite (mg/l)	Sulfate (mg/l)	Sulfide (mg/l)	Calcium (mg/l)	Dissolved Calcium (mg/l)	Iron (mg/l)	Dissolved Iron (mg/l)	Magnesium (mg/l)	Dissolved Magnesium (mg/l)	Manganese (mg/l)	Dissolved Manganese (mg/l)	Sodium (mg/l)	Dissolved Sodium (mg/l)	Potassium (mg/l)	Dissolved Potassium (mg/l)
MW-12	12/1/1998	13.4	2,006	0.39	-41	6.9	0.5	7	284	0.94	294	0.48	<0.05		73	0.2	119	104	7.48	4.01	26.8	25.3	4.41	4.40	183	197	4.1	3.81
MW-12	10/5/1999	15.8	1,849	0.10	-105.2	7.0	0.36	30	300	0.90	342	0.27	<0.05		66	0.2	104	126	<0.01	3.66	27.8	31.6	<0.01	4.90	166	226	4.9	5.3
MW-12	8/8/2001	13.5	3,300	0.24	-38.5	6.6	0.50	13.9	336	1.77	920	<0.05	<0.05		160	<0.1	217		16.9		57.5		8.41		427		6.3	
MW-12 DUP	8/8/2001	NA	NA	NA	NA	NA	0.74	14.9	338	1.85	930	<0.05	<0.05		160	<0.1	217		14.8		56.2		8.14		433		6.0	
MW-12	10/30/2001	14.2	2,850	0.14	-127.1	6.8	0.57	5.7	309	1.35	590	0.18	<0.05		110	3.5			4.73		37.0		4.69		342		5.0	
MW-12	10/25/2006	13.7	3,500	1.26	-127.1	6.9	0.024	6.5	333	1.55	1,300	<0.05	<0.05		110	<0.1			7.50		44.8		6.02		684		4.5	
MW-12	11/28/2007	11.2	3,307	0.18	-302	7.0	0.012	4.0	274	1.47	1,300	<0.05	<0.05		79	<0.04			6.68		46.0		4.44		666		3.9	
MW-12	11/4/2008	14.3	6,319	0.02	-88	6.7	0.12	2.74	332	2.08	2,000	<0.05	<0.05		138	<0.1	259		13.70		69.7		7.82		1110		5.6	
MW-12	3/16/2009	6.1	4,516	1.08	-48	6.6	0.87	NM	270	1.89	2,300	<0.05	<0.05		140	<0.1	269		11.50		81.7		8.60		1060		5.1	
MW-12	7/16/2009	14.5	6,493	7.32	-39.3	6.7	0.9	14	360	2.57	2,480	<0.6	<0.6		148	0.8			15.10		79.1		9.07		1,170		10.9	
MW-13	8/8/2001	15.4	5,742	0.23	-118.5	7.8	0.08	15.2	255	1.45	1,900	0.05	<0.05		160	<0.1	209		2.59		49.6		2.67		1,200		12.1	
MW-13	10/29/2001	15.5	6,625	0.20	-136	7.4	0.07	9.9	426	1.29	1,700	0.61	0.08		120	2.2			3.75		40.9		2.96		1,160		8.2	
MW-13	10/24/2006	15.2	6,090	2.67	-146	7.3	0.16	8.4	431	1.35	2,200	<0.05	<0.05		98	<0.1			9.21		53.7		6.03		1,210		9.1	
MW-13	11/28/2007	12.7	5,696	0.08	-274	7.3	0.003	7.0	420	1.74	2,200	0.05	<0.05		95	0.4			7.83		50.8		4.95		1,250		9.6	
MW-13	11/5/2008	7.08	6,782	0.12	-97	7.1	0.021	3.8	410	1.57	2,000	<0.05	<0.5		91	<0.1	196		7.60		52.3		5.40		1,430		11.0	
MW-13	7/16/2009	16.0	6,476	6.94	-113.4	7.2	6.15	15	400	2.10	2,290	<0.6	<0.6		112	<0.5			1.75		53.9		6.51		1,390		18.9	
MW-14	8/9/2001	11.5	2,064	3.66	330.7	7.2	<0.002	14.1	328	0.19	680	0.08	<0.05		130	<0.1	144		0.18		64.1		0.04		394		6.4	
MW-14	10/30/2001	13.2	2,478	0.80	-39.1	7.2	0.013	4.3	334	0.31	770	<0.05	<0.05		120	2.5			0.06		64.8		0.06		466		7.3	
MW-14	10/24/2006	12.9	4,310	3.11	-60.6	7.2	0.31	3.3	336	0.25	1,700	<0.05	<0.05		88	<0.1			0.15		94.9		0.20		831		8.0	
MW-14	11/29/2007	10.3	4,402	1.27	-110	7.1	0.16	4.0	371	0.53	1,800	<0.05	<0.05		87	0.12			0.44		111		0.25		777		10.5	
MW-14	11/4/2008	14.5	6,397	-0.13	11.2	6.8	0.14	2.4	340	0.39	2,100	<0.05	<0.05		80	<0.1	320		0.39		138		0.28		1010		13.5	
MW-14	2/24/2009	5.3	3,534	0.73	-34	7.2	0.15	NM	299	0.23	1,500	0.07	<0.05		68	<0.1	165		0.06		79.8		0.18		833		7.3	
MW-14	7/16/2009	11.6	5,970	21.58	72.6	6.8	0.465	51	380	0.69	2,430	<0.6	<0.6		81.4	1.2			0.11		132		0.53		931		21.1	
MW-15	8/8/2001	13.0	2011	0.20	289.1	6.7	<0.002	11.7	410	0.08	600	1.34	<0.05		160	0.1	281		2.33		70.4		0.46		204		4.9	
MW-15	10/30/2001	14.6	1656	0.16	83.9	6.8	<0.002	4.1	395	0.07	410	0.85	<0.05		110	1.4			0.02		47.5		0.40		196		3.8	
MW-15 DUP	10/30/2001	NA	NA	NA	NA	NA	<0.002	3.7	386	0.05	450	0.91	<0.05		110	1.5			0.03		47.6		0.39		198		4.0	
MW-15	10/24/2006	13.9	2,180	1.14	64.2	6.8	<0.002	3.6	434	0.09	660	1.89	<0.05		84	<0.1			<0.02		62.3		0.27		311		4.7	
MW-15	11/28/2007	11.7	3,085	3.16	-128	7.1	<0.002	2.0	346	1.03	1100	<0.05	<0.05		74	<0.04			0.14		71.7		0.39		455		4.9	
MW-15 DUP	11/4/2008	14.3	4,719	2.42	75	6.8	<0.002	1.77	345	0.07	1,900	0.34	<0.05		110	<0.1	327		<0.02		82.3		0.82		594		6.1	
MW-15	7/16/2009	14.6	3,349	17.13	135.7	6.8	<0.004	12	400	<0.1	1,130	1.7	<0.6		88.7	1.6			0.02		65.0		0.14		475		7.94	
TK-2	10/6/1999	13.3	702	0.19	66.9	7.5			380		20.2																	

Notes:

1. In general the field parameters were stable with very little variation. However, as noted, some readings varied.
2. Readings were collected using a low flow peristaltic pump and water quality meter with flow through cell.
3. Results shown for MW-10 are the higher of the results from the sample designated MW-10 or its duplicate sample (Delphi MW-DUP).
4. < - Indicates compound not detected above the specified detection limit.
5. Blank = Not tested.
6. NM = not measured

**FIGURE**





**MW-8**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
10/30/96	0.20	0.024	1.5	0.047
11/21/96	0.22	0.022	2.6	0.049
8/28/97	0.30	0.028	2.8	0.062
10/10/97	0.35	0.018	4.3	0.11
12/2/98	0.22	0.012	1.6	0.062
10/7/99	0.20	0.011	2.802	0.18
7/15/09	0.05	0.005	0.865	0.1

**MW-7**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
4/30/96	1300	<0.5	37	1.8
6/20/96	1100	<0.5	24	2.4
10/30/96	790	<0.5	32	2.3
11/21/96	850	<0.5	35	3.1
8/28/97	820	<0.2	22	1.1
10/10/97	720	<0.2	43	4.8
12/3/98	570	<0.2	55	4.2
10/7/99	540	<0.05	41	3.5
4/7/03	75	<0.2	45	3
10/25/06	260	0.077	36	1.7
11/29/07	434	0.049	40	3.2
11/5/08	1.1	<0.2	70	2.6
2/24/09	530	0.071	56	3.6
7/15/09	618	0.112	58.3	2.5

**MW-4**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
4/30/96	32	<0.5	170	40
6/20/96	19	<0.5	110	19
10/30/96	34	<0.5	120	20
11/21/96	37	<0.5	120	14
8/28/97	29	<0.2	100	14
10/10/97	33	<0.2	110	27
12/2/98	21	<0.2	110	12
12/2/98	20	<0.2	120	13
10/7/99	20	<0.05	100.14	14
8/9/01	30	0.003	93.28	18
10/31/01	22	<0.002	84.25	18
4/7/03	39	.08	110	26
7/20/09	23	<0.05	41.5	6.7

**MW-9**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
10/30/96	2.2	0.21	3.3	0.1
11/21/96	2	0.06	3.2	0.16
11/21/96	1.9	0.07	2.9	0.15
8/28/97	1.4	0.027	2.5	0.056
10/10/97	1.6	0.047	2.7	0.12
12/2/98	1.9	0.066	2.5	0.030
10/5/99	1.2	0.062	1.508	0.091
10/5/99	1.4	0.058	1.608	0.11
7/20/09	3.3	0.186	1.7	<0.05

**MW-10**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
10/30/96	0.98	0.12	1.8	0.11
11/21/96	0.87	0.22	1.7	<0.1
8/28/97	0.38	0.16	1.1	0.070
10/10/97	0.35	0.28	0.76	0.047
12/1/98	0.46	0.016	1.3	0.11
10/6/99	0.23	0.24	0.722	0.200
8/9/01	0.21	0.21	0.514	0.057
10/31/01	0.25	0.023	0.473	0.053
7/15/09	0.079	0.118	0.275	0.044

**MW-15**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/8/01	<0.002	0.013	<0.002	<0.002
10/30/01	<0.002	0.018	<0.002	<0.002
10/30/01	<0.002	0.020	<0.002	<0.002
1/12/05	<0.002	0.006	<0.002	<0.002
10/24/06	<0.002	0.007	<0.002	<0.002
11/28/07	<0.002	0.007	<0.002	<0.002
11/4/08	<0.002	0.0059	<0.002	<0.002
7/16/09	<0.005	0.0097	<0.005	<0.005

**MW-14**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/10/01	<0.002	<0.002	0.005	<0.002
10/30/01	<0.002	<0.002	0.004	<0.002
10/24/06	<0.002	<0.002	<0.002	<0.002
11/29/07	<0.002	<0.002	0.010	<0.002
11/4/08	<0.002	<0.002	0.008	0.003
2/24/09	0.016	<0.002	0.002	<0.002
7/16/09	0.020	<0.005	0.028	<0.005

**MW-11**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/28/97	<0.0005	<0.0005	0.0045	0.0039
10/10/97	<0.0005	<0.0005	0.0032	0.0012
10/10/97	<0.0005	<0.0005	0.0030	0.0010
12/1/98	<0.0005	<0.0005	0.013	0.0046
10/5/99	<0.0005	<0.0005	0.010	0.0019
8/8/01	<0.002	<0.002	0.009	0.008
10/30/01	<0.002	<0.002	0.008	0.006
1/12/05	<0.002	<0.002	<0.002	<0.002
10/24/06	<0.002	<0.002	<0.002	<0.002
11/28/07	<0.002	<0.002	0.002	0.003
11/4/08	<0.002	<0.002	0.003	0.0058
7/16/09	<0.005	<0.005	<0.005	<0.005

**MW-12**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/28/97	<0.0005	<0.0005	0.089	0.11
8/28/97	<0.0005	<0.0005	0.13	0.19
10/10/97	<0.0005	<0.0005	0.16	0.17
12/1/98	<0.0005	<0.0005	0.047	0.088
10/5/99	<0.0005	<0.0005	0.027	0.032
8/8/01	<0.002	<0.002	0.14	0.13
8/8/01	<0.002	<0.002	0.13	0.12
10/30/01	<0.002	<0.002	0.032	0.011
1/12/05	<0.002	<0.002	0.026	0.033
10/25/06	<0.002	<0.002	0.015	0.033
11/28/07	<0.002	<0.002	0.011	0.014
11/4/08	<0.002	<0.002	0.044	0.091
3/16/09	0.005	0.002	0.150	0.081
7/16/09	<0.005	<0.005	0.132	0.141

**MW-13**

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/8/01	<0.002	<0.002	<0.002	<0.002
10/29/01	<0.002	<0.002	<0.002	<0.002
1/12/05	<0.002	<0.002	<0.002	<0.002
10/24/06	0.002	<0.002	<0.002	<0.002
11/28/07	<0.002	<0.002	<0.002	<0.002
11/5/08	<0.002	<0.002	<0.002	<0.002
7/16/09	<0.005	<0.005	<0.005	<0.005

**NOTES:**

1. BASE MAP ADAPTED FROM A 2005 AERIAL PHOTOGRAPH DOWNLOADED FROM [http://www.nysgis.state.ny.us/gateway/mg/interactive\\_main.html](http://www.nysgis.state.ny.us/gateway/mg/interactive_main.html) AND SITE OBSERVATIONS.
2. ANALYTICAL TESTING WAS COMPLETED BY FREE-COL LABORATORIES, INC.
3. UNITS ARE LISTED IN MILLIGRAMS PER LITER (mg/l). (< - INDICATES COMPOUND NOT DETECTED ABOVE THE SPECIFIED DETECTION LIMIT)
4. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

**LEGEND:**

- APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELL INSTALLED BY GZA
- APPROXIMATE LOCATION AND DESIGNATION OF STREAM WATER SAMPLE
- AOC** DENOTES AREA OF CONCERN
- TCE = TRICHLOROETHENE
- PCE = TETRACHLOROETHENE
- 1,2-DCE = TRANS & CIS 1,2-DICHLOROETHENE
- VC = VINYL CHLORIDE

DRAWN BY: DEW DATE: AUGUST 2009	APPROXIMATE SCALE IN FEET 0 90 180 360	DELPHI THERMAL SYSTEMS 200 UPPER MOUNTAIN ROAD LOCKPORT, NEW YORK JULY 2009 SAMPLING GROUNDWATER ANALYTICAL TEST RESULTS FOR TARGET CHLORINATED COMPOUNDS
PROJECT No. <b>21.0056192.10</b>		FIGURE No. <b>1</b>



**APPENDIX A**

**MONITORING WELL OBSERVATION &  
GROUNDWATER SAMPLING LOGS**



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/20/2009  
 Sampling Personnel: Chris Boron  
 Weather Conditions: Sunny 72F

Well ID: MW-4  
 Time In: 8:10  
 Time Out: 12:20

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Vegetation is growing between the concrete surface seal and pavement.  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 7.91  
 Length of Water Column: 27.09  
 Depth of Well (from Log): 32.5 (plus 2 feet for riser stickup)  
 Length of Time Pumping: 3 hrs 35 minutes  
 Total Volume Removed: 8 gallons  
 Well Purge Pumping Rate: 0.04 gallon/minute  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-4
Sample Time:	12:20
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters
	VOC COCs

Reading:	1	2	3	4	5	6
Time:	8:30	8:36	8:44	8:52	9:02	9:12

Cumulative Volume Purged	0 gals	0.5 gals	1 gals	1.5 gals	2 gals	2.5 gals	NOTES
Depth to Water	7.91	9.9	10.2	10.25	10.28	10.38	
pH	6.9	6.53	6.49	6.48	6.48	6.48	
Conductance (mS/cm)	12.28	12.26	12.17	12.21	12.19	12.05	
Turbidity (NTUs)	86	35	15.7	4.5	1.7	2.3	
Tempurature (°C)	14.93	15.23	15.31	15.69	15.81	15.83	
DO (mg/L)	5.53	1.96	2.7	2.99	2.99	3.51	
ORP (mV)	82.5	96.5	50.9	41.9	41.1	40.5	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/20/2009  
 Sampling Personnel: Chris Boron  
 Weather Conditions: Sunny 72F

Well ID: MW-4  
 Time In: 8:10  
 Time Out: 12:20

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes

Condition of Surface Seal: Vegetation is growing between the concrete surface seal and pavement.

Condition of Riser Pipe: Good

PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 7.91  
 Length of Water Column: 27.09  
 Depth of Well (from Log): 32.5 (plus 2 feet for riser stickup)  
 Length of Time Pumping: 3 hrs 35 minutes  
 Total Volume Removed: 8 gallons  
 Well Purge Pumping Rate: 0.04 gallon/minute  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

<b>SAMPLING INFORMATION</b>	
Sample ID:	MW-4
Sample Time:	12:20
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	7	8	9	10	11	12
Time:	9:25	9:37	9:56	10:22	10:36	10:58

Cumulative Volume Purged	3 gals	3.5 gals	4.25 gals	5 gals	5.5 gals	6 gals	NOTES
Depth to Water	10.28	10.28	10.3	10.3	10.35	10.37	
pH	6.47	6.46	6.44	6.44	6.44	6.45	
Conductance (mS/cm)	12.2	12.27	12.22	12.37	11.81	12.33	
Turbidity (NTUs)	2.1	3.5	0.2	0.8	1.2	2.1	
Temperature (°C)	16.45	16.73	16.61	17.24	17.37	17.13	
DO (mg/L)	3.45	3.09	4.21	3.13	3.82	3.15	
ORP (mV)	39.2	39.7	40.5	39.1	43.4	34.6	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/20/2009  
 Sampling Personnel: Chris Boron  
 Weather Conditions: Sunny 72F

Well ID: MW-4  
 Time In: 8:10  
 Time Out: 12:20

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Vegetation is growing between the concrete surface seal and pavement.  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 7.91  
 Length of Water Column: 27.09  
 Depth of Well (from Log): 32.5 (plus 2 feet for riser stickup)  
 Length of Time Pumping: 3 hrs 35 minutes  
 Total Volume Removed: 8 gallons  
 Well Purge Pumping Rate: 0.04 gallon/minute  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID: MW-4  
 Sample Time: 12:20  
 # Containers: 11  
 Duplicate ID: No  
 Analysis: Nat Attenuation Parameters  
VOC COCs

Reading:	13	14				
Time:	11:28	12:05				

Cumulative Volume Purged	7 gals	8 gals	NOTES			
Depth to Water	10.35	10.36				
pH	6.43	6.41				
Conductance (mS/cm)	12.46	12.63				
Turbidity (NTUs)	1.1	2.2				
Tempurature (°C)	17.62	17.68				
DO (mg/L)	3.24	3.12				
ORP (mV)	36.7	35.1				

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/15/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-7  
 Time In: 9:50  
 Time Out: 11:15  
 Returned to collect Sample.

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 7.24  
 Length of Water Column: 20.46  
 Depth of Well (from Log): 27.7  
 Length of Time Pumping: 45 min  
 Total Volume Removed: 7 gallons  
 Well Purge Pumping Rate: 0.16 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: Yes

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID: MW-7  
 Sample Time: 12:45  
 # Containers: 11  
 Duplicate ID: No  
 Analysis: Nat Attenuation Parameters  
VOC COCs

Reading:	1	2	3	4	5	6
Time:	10:05	10:09	10:18	10:30	10:42	10:50

Cumulative Volume Purged	0 gals	0.5 gals	2 gals	4 gals	6 gals	7 gals	NOTES
Depth to Water	9.2	10.63	16.14	20.92	25.71	28.12	
pH	7.07	7.06	7.07	7.09	7.06	7.06	
Conductance (mS/cm)	2.555	2.555	2439	2.405	2.497	2.558	
Turbidity (NTUs)	1.1	133	112.1	88.7	110.2	36.4	
Tempurature (°C)	16.31	16.25	16.11	16.33	16.08	16.38	
DO (mg/L)	7.04	5.75	4.9	2.25	3.02	10.14	
ORP (mV)	136.4	134.1	119.3	41.5	70.1	32	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/15/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-8  
 Time In: 11:15  
 Time Out: 12:20

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 6.21  
 Length of Water Column: 10.09  
 Depth of Well (from Log): 16.3  
 Length of Time Pumping: 40 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.08 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-8
Sample Time:	12:15
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	1	2	3	4	5	6
Time:	11:28	11:36	11:44	11:52	12:00	12:08

Cumulative Volume Purged	0 gals	0.5 gals	1 gals	1.5 gals	2 gals	2.5 gals	NOTES
Depth to Water	6.87	7.42	7.43	7.44	7.44	7.43	
pH	6.92	6.78	6.83	6.86	6.86	6.85	
Conductance (mS/cm)	3.835	3.03	2.709	2.484	2.4	2.406	
Turbidity (NTUs)	8.9	7.4	7.7	9.7	9.5	8.3	
Tempurature (°C)	18.41	16.06	16.45	16.41	16.42	16.31	
DO (mg/L)	6.06	2.69	2.64	2.6	2.34	2.37	
ORP (mV)	-110.2	-110.4	-95.1	-80.8	-73.2	-50.3	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/15/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-8  
 Time In: 11:15  
 Time Out: 12:20

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 6.21  
 Length of Water Column: 10.09  
 Depth of Well (from Log): 16.3  
 Length of Time Pumping: 40 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.08 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID: MW-8  
 Sample Time: 12:15  
 # Containers: 11  
 Duplicate ID: No  
 Analysis: Nat Attenuation Parameters  
 VOC COCs

Reading: 7  
 Time: 12:16

		NOTES				
Cumulative Volume Purged	3 gals					
Depth to Water	7.44					
pH	6.85					
Conductance (mS/cm)	2.408					
Turbidity (NTUs)	7.4					
Temperature (°C)	16.29					
DO (mg/L)	2.28					
ORP (mV)	-48.6					

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/20/2009  
 Sampling Personnel: Chris Boron  
 Weather Conditions: Sunny 72F

Well ID: MW-9  
 Time In: 12:30  
 Time Out:

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Vegetation is growing between the concrete surface seal and pavement.  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 9.05  
 Length of Water Column: 7.95  
 Depth of Well (from Log): 15.42 (plus 2 feet for riser stickup)  
 Length of Time Pumping: 1 hour 18 minutes  
 Total Volume Removed: 3.5 gallons  
 Well Purge Pumping Rate: 0.05 gallons/minute  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID: MW-9  
 Sample Time: 14:00  
 # Containers: 11  
 Duplicate ID: No  
 Analysis: Nat Attenuation Parameters  
VOC COCs

Reading:	1	2	3	4	5	6
Time:	12:42		13:06	13:13	13:24	13:34

Cumulative Volume Purged	0 gals	0.5 gals	1 gals	1.5 gals	2 gals	2.5 gals	NOTES
Depth to Water	9.51	9.59	9.61	9.63	9.57	9.55	
pH	7.02	6.81	6.7	6.67	6.67	6.64	
Conductance (mS/cm)	7.771	6.67	7.83	8.079	8.444	8.467	
Turbidity (NTUs)	16	7.8	8.5	8.1	7.8	1.8	
Temperature (°C)	18.48	18.03	18.24	18.11	18.49	18.47	
DO (mg/L)	4.15	3.48	3.31	3.35	3.54	3.71	
ORP (mV)	77.4	109.1	114.2	113.7	112.2	112.4	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/20/2009  
 Sampling Personnel: Chris Boron  
 Weather Conditions: Sunny 72F

Well ID: MW-9  
 Time In: 12:30  
 Time Out: 14:00

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Vegetation is growing between the concrete surface seal and pavement.  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 9.05  
 Length of Water Column: 7.95  
 Depth of Well (from Log): 15.42 (plus 2 feet for riser stickup)  
 Length of Time Pumping: 1 hour 18 minutes  
 Total Volume Removed: 3.5 gallons  
 Well Purge Pumping Rate: 0.05 gallons/minute  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID: MW-9  
 Sample Time: 14:00  
 # Containers: 11  
 Duplicate ID: No  
 Analysis: Nat Attenuation Parameters  
VOC COCs

Reading:	7	8				
Time:	13:45	13:56				

	Cumulative Volume Purged		NOTES
	3 gals	3.5 gals	
Depth to Water	9.56	9.54	
pH	6.64	6.67	
Conductance (mS/cm)	8.408	8.381	
Turbidity (NTUs)	2.1	6.1	
Temperature (°C)	17.82	17.78	
DO (mg/L)	4.1	4.75	
ORP (mV)	111.1	109.1	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/15/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-10  
 Time In: 14:00  
 Time Out: 15:00

**WELL CONDITION**

Well Locked: No  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 15.62  
 Length of Water Column: 5.68  
 Depth of Well (from Log): 21.3  
 Length of Time Pumping: 32 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.09 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-10
Sample Time:	14:50
# Containers:	11
Duplicate ID:	MW-Dup
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	1	2	3	4	5	6
Time:	14:17	14:22	14:28	14:33	14:38	14:43

Cumulative Volume Purged	0 gals	0.5 gals	1 gals	1.5 gals	2 gals	2.5 gals	NOTES
Depth to Water	16.27	16.4	16.41	16.41	16.42	16.41	
pH	6.92	6.71	6.68	6.64	6.64	6.63	
Conductance (mS/cm)	9.145	8.957	8.938	9.167	9.264	9.457	
Turbidity (NTUs)	25	7.8	4.4	2.1	0.9	0.5	
Temperature (°C)	14.36	13.4	13.34	13.33	13.17	13.25	
DO (mg/L)	10.41	10.24	9.53	0.98	9.13	9.03	
ORP (mV)	46.7	67.3	73.3	78.6	79.3	80.1	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/15/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-10  
 Time In: 14:00  
 Time Out: 15:00

**WELL CONDITION**

Well Locked: No  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 15.62  
 Length of Water Column: 5.68  
 Depth of Well (from Log): 21.3  
 Length of Time Pumping: 32 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.09 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-10
Sample Time:	14:50
# Containers:	11
Duplicate ID:	MW-Dup
Analysis:	Nat Attenuation Parameters
	VOC COCs

Reading:	7					
Time:	14:49					

		NOTES				
Cumulative Volume Purged	3 gals					
Depth to Water	16.41					
pH	6.63					
Conductance (mS/cm)	9.579					
Turbidity (NTUs)	0.2					
Tempurature (°C)	13.17					
DO (mg/L)	8.7					
ORP (mV)	79.6					

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-11  
 Time In: 10:10  
 Time Out: 12:10

**WELL CONDITION**

Well Locked: No  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 5.9  
 Length of Water Column: 18.2  
 Depth of Well (from Log): 24.1  
 Length of Time Pumping: 1 hour 39 min  
 Total Volume Removed: 5 gallons  
 Well Purge Pumping Rate: 0.05 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-11
Sample Time:	12:00
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	1	2	3	4	5	6
Time:	10:24	10:28	10:38	10:50	11:00	11:21

Cumulative Volume Purged	0 gals	0.5 gals	1 gals	1.5 gals	2 gals	3 gals	NOTES
Depth to Water	7.19	8.42	8.23	8.25	8.25	8.26	
pH	7.86	7.71	7.62	7.55	7.49	7.41	
Conductance (mS/cm)	3.751	1.712	1.266	1.144	1.055	1100	
Turbidity (NTUs)	-6.3	-0.4	1.5	2.1	-9.7	-6.9	
Tempurature (°C)	12.13	12.35	13.76	13.91	13.48	13.82	
DO (mg/L)	11.86	3.4	3	2.99	3.23	353	
ORP (mV)	-20	-6	26.1	66.3	53	4.2	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-11  
 Time In: 10:10  
 Time Out: 12:10

**WELL CONDITION**

Well Locked: No  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 5.9  
 Length of Water Column: 18.2  
 Depth of Well (from Log): 24.1  
 Length of Time Pumping: 1 hour 39 min  
 Total Volume Removed: 5 gallons  
 Well Purge Pumping Rate: 0.05 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID: MW-11  
 Sample Time: 12:00  
 # Containers: 11  
 Duplicate ID: No  
 Analysis: Nat Attenuation Parameters  
 VOC COCs

Reading:	7	8				
Time:	11:42	12:03				

Cumulative Volume Purged	4 gals	5 gals	NOTES			
Depth to Water	8.25	8.26				
pH	7.34	7.34				
Conductance (mS/cm)	1.1138	1.143				
Turbidity (NTUs)	-10.1	-8.6				
Temperature (°C)	13.69	13.71				
DO (mg/L)	3.77	3.8				
ORP (mV)	-13.1	-15.2				

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-12  
 Time In: 13:40  
 Time Out: 14:20

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 5.93  
 Length of Water Column: 9.17  
 Depth of Well (from Log): 15.1  
 Length of Time Pumping: 26 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.12 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-12
Sample Time:	14:30
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	1	2	3	4	5	6
Time:	13:50	13:54	13:58	14:02	14:07	14:11

Cumulative Volume Purged	0 gals	1/2 gals	1 gals	1 1/2 gals	2 gals	2 1/2 gals	NOTES
Depth to Water	6.2	6.12	6.13	6.13	6.13	6.12	
pH	6.86	6.76	6.71	6.68	6.68	6.68	
Conductance (mS/cm)	6.604	6.033	6.131	6.427	6.499	6.5	
Turbidity (NTUs)	21	0.06	10.2	-7.4	2	1.6	
Tempurature (°C)	13.61	13.98	14.3	14.55	14.57	14.54	
DO (mg/L)	7.7	7.41	7.31	7.26	7.16	7.29	
ORP (mV)	-41.2	-35.6	-34.4	-37.1	-38.6	-38.9	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-12  
 Time In: 13:40  
 Time Out: 14:20

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 5.93  
 Length of Water Column: 9.17  
 Depth of Well (from Log): 15.1  
 Length of Time Pumping: 26 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.12 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID:	MW-12
Sample Time:	14:30
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	7					
Time:	14:16					

	Cumulative Volume Purged	NOTES				
	3 gals					
Depth to Water	6.13					
pH	6.68					
Conductance (mS/cm)	6.493					
Turbidity (NTUs)	1.1					
Tempurature (°C)	14.48					
DO (mg/L)	7.32					
ORP (mV)	-39.3					

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-13  
 Time In: 12:30  
 Time Out: 13:30

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 5.29  
 Length of Water Column: 971  
 Depth of Well (from Log): 15  
 Length of Time Pumping: 31 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.10 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

**PARAMETER STABILITY**

pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

**SAMPLING INFORMATION**

Sample ID:	MW-13
Sample Time:	13:30
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	1	2	3	4	5	6
Time:	12:49	12:53	12:57	13:02	13:08	13:15

Cumulative Volume Purged	0 gals	0.5 gals	1 gals	1.5 gals	2 gals	2.5 gals	NOTES
Depth to Water	5.44	5.44	5.45	5.44	5.43	5.44	
pH	7.45	7.21	7.18	7.16	7.19	7.2	
Conductance (mS/cm)	6.832	6.766	6.733	6.707	6.676	6.65	
Turbidity (NTUs)	2.7	-1.2	-6.3	-9.7	-8.5	-9.8	
Tempurature (°C)	15.2	16.15	16.24	16.21	16.36	16.46	
DO (mg/L)	4.01	1.7	1.73	3.72	4.78	6.2	
ORP (mV)	0.9	-68.6	-88	-113	-115.4	-117	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-13  
 Time In: 12:30  
 Time Out: 13:30

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 5.29  
 Length of Water Column: 971  
 Depth of Well (from Log): 15  
 Length of Time Pumping: 31 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.10 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-13
Sample Time:	13:30
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters
	VOC COCs

Reading:	7					
Time:	13:20					

	Cumulative Volume Purged	NOTES				
	3 gals					
Depth to Water	5.44					
pH	7.18					
Conductance (mS/cm)	6.476					
Turbidity (NTUs)	-9.6					
Temperature (°C)	16.03					
DO (mg/L)	6.94					
ORP (mV)	-113.4					

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-14  
 Time In: 14:30  
 Time Out: 15:30

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 7.1  
 Length of Water Column: 12  
 Depth of Well (from Log): 19.1  
 Length of Time Pumping: 1 hr. 3 min  
 Total Volume Removed: 5 gallons  
 Well Purge Pumping Rate: 0.08 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: Yes

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-14
Sample Time:	15:30
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	1	2	3	4	5	6
Time:	14:47	14:50	15:05	15:10	15:14	15:19

Cumulative Volume Purged	0 gals	0.5 gals	1.5 gals	2 gals	2.5 gals	3 gals	NOTES
Depth to Water	8.48	10.64	12.2	13.42	14.38	16	Heavy rains druing sampling
pH	6.9	6.72	6.8	6.89	6.97	6.9	
Conductance (mS/cm)	6.237	6.181	5.631	5.155	4.698	5.14	
Turbidity (NTUs)	0.5	5	3.2	1.2	2.4	10.1	
Tempurature (°C)	12.99	12.56	12.59	12.64	12.9	127	
DO (mg/L)	7.57	14.04	22.93	20.54	18.9	20.67	
ORP (mV)	26.1	38.4	58.1	60.5	68.8	70.1	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-14  
 Time In: 14:30  
 Time Out: 15:30

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 7.1  
 Length of Water Column: 12  
 Depth of Well (from Log): 19.1  
 Length of Time Pumping: 40 min  
 Total Volume Removed: 5 gallons  
 Well Purge Pumping Rate:  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: Yes

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Tempurature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-14
Sample Time:	16:30
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	7	8	9			
Time:	15:23	14:50	16:17			

Cumulative Volume Purged	3.5 gals		5 gals		NOTES	
	Depth to Water	17.33	19.67	10.92		
pH	6.84	6.79				
Conductance (mS/cm)	5.459	5.97				
Turbidity (NTUs)	5.7	168				
Tempurature (°C)	12.31	11.62				
DO (mg/L)	21.36	21.58				
ORP (mV)	69.3	72.6				

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-15  
 Time In: 8:50  
 Time Out: 10:00

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 8.31  
 Length of Water Column: 9.59  
 Depth of Well (from Log): 17.9  
 Length of Time Pumping: 36 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.08 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-15
Sample Time:	10:00
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading:	1	2	3	4	5	6
Time:	9:00	9:06	9:12	9:18	9:24	9:30

Cumulative Volume Purged	0 gals	0.5 gals	1 gals	1.5 gals	2 gals	2.5 gals	NOTES
Depth to Water	8.81	9.13	9.14	9.14	9.13	9.14	
pH	7.37	6.88	6.84	6.83	6.81	6.81	
Conductance (mS/cm)	3.346	3.34	3321	3.33	3.34	3.344	
Turbidity (NTUs)	6.5	7.5	8.6	8.6	4.3	0.6	
Temperature (°C)	16.1	15.19	14.91	14.88	14.85	14.49	
DO (mg/L)	15.04	19.21	20.96	19.72	18.4	17.36	
ORP (mV)	102	116.6	124.3	129.1	132.2	134.7	

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems



**MONITORING WELL OBSERVATIONS & GROUNDWATER SAMPLING LOG**

Site: Delphi Thermal Systems  
 Date: 7/16/2009  
 Sampling Personnel: Jen Davide  
 Weather Conditions: Sunny 75F

Well ID: MW-15  
 Time In: 8:50  
 Time Out: 10:00

**WELL CONDITION**

Well Locked: Yes  
 J-Plug Intacked: Yes  
 Does well appear to be functioning properly: Yes  
 Condition of Surface Seal: Good  
 Condition of Riser Pipe: Good  
 PID Reading at Top of Well: Not Measured

**WELL WATER INFORMATION**

Depth of Water: 8.31  
 Length of Water Column: 9.59  
 Depth of Well (from Log): 17.9  
 Length of Time Pumping: 36 min  
 Total Volume Removed: 3 gallons  
 Well Purge Pumping Rate: 0.08 gal/min  
 Sheen Observed: No  
 DNAPL Observed: No  
 Did Well Go Dry: No

PARAMETER STABILITY	
pH	+/- 0.1
Conductivity	+/- 3%
Temperature	+/- 10%
Turbidity	+/- 10%
ORP	+/- 10 mV
DO	+/- 10%

SAMPLING INFORMATION	
Sample ID:	MW-15
Sample Time:	10:00
# Containers:	11
Duplicate ID:	No
Analysis:	Nat Attenuation Parameters VOC COCs

Reading: 7  
 Time: 9:36

Cumulative Volume Purged		NOTES				
	3 gals					
Depth to Water	9.13					
pH	6.8					
Conductance (mS/cm)	3.349					
Turbidity (NTUs)	2.8					
Temperature (°C)	14.55					
DO (mg/L)	17.13					
ORP (mV)	135.7					

Water Quality Meter: YSI 6820 MP Sonde 2.85"  
 Peristaltic Pump: GeoPump  
 Tubing Type: Polyethylene tubing

Miscellaneous Observations/Notes/Problems

**APPENDIX B**

**ISLECHEM ANALYTICAL LABORATORY REPORT**

## IsleChem, LLC Analysis Report

Client: Christopher Boron  
 GZA GeoEnvironmental of New York  
 535 Washington Street

Project: **Water Samples for Analysis**  
 Annual Sampling Event  
 Delphi Thermal Systems

Buffalo, NY 14203

Report Date: Thursday, July 30, 2009

Phase:

Report ID: **NY907087.0.17432**

Batch: **Annual Analysis**

PO# / Release# /

Contact: Christopher Boron

Reference #:

Sample Date: **Monday, July 20, 2009**

Authorized Signature:



Sample Time: **12:20:00 PM**

Richard V. Finn, Manager of Chemical Testing

Report Status: **Final**

*The following result table is for 6 samples received by IsleChem LLC on 07/20/2009 submitted by Client  
 Also enclosed is the paperwork submitted with the samples.*

**Notes:**

*Samples 098670 (170169 - 170171) and 098673 (170181 - 170183), tested for Volatiles by EPA 624, were initially diluted by a factor of 10x based on suspected high levels of analytes.*

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>1</b>	Delphi - MW 4 / Field Grab - Ground Water					
Chloride		170163				
EPA 300.0 Rev 2.1	Chloride		<b>5320</b>	<b>mg/L</b>	MR	7/22/2009
Nitrate (as N)		170163				
EPA 300.0 Rev 2.1	Nitrate (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	<b>Location / Description</b>					
<b>1</b>	Delphi - MW 4 / Field Grab - Ground Water					
Nitrite (as N)		170163				
EPA 300.0 Rev 2.1	Nitrite (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Sulfate (as SO4)		170163				
EPA 300.0 Rev 2.1	Sulfate (as SO4)		<b>295</b>	<b>mg/L</b>	MR	7/22/2009
Metals Dissolved - Delphi Groundwater		170164				
EPA 200.7 Rev 4.4	Iron, Soluble		<b>3.21</b>	<b>mg/L</b>	RVF	7/24/2009
EPA 200.7 Rev. 4.4	Magnesium - Soluble		<b>193</b>	<b>mg/L</b>	RVF	7/24/2009
EPA 200.7 Rev 4.4	Manganese, Soluble		<b>2.64</b>	<b>mg/L</b>	RVF	7/24/2009
	Potassium - Soluble		<b>50.5</b>	<b>mg/L</b>	RVF	7/24/2009
	Sodium - Soluble		<b>2100</b>	<b>mg/L</b>	RVF	7/24/2009
Alkalinity		170161				
SM 18-20 2320B (97)	Alkalinity		<b>330</b>	<b>mg/L</b>	RVF	7/24/2009
Ammonia (as N)		170162				
SM 18 4500-NH3 F or G	Ammonia (as N)		<b>3.83</b>	<b>mg/L</b>	MF	7/23/2009
Organic Carbon, Total		170162				
SM 18-21 5310B (00)	Organic Carbon, Total		<b>13</b>	<b>mg/L</b>	MF	7/22/2009
Sulfide (as S)		170165				
EPA 376.1	Sulfide (as S)		<b>2.0</b>	<b>mg/L</b>	MF	7/23/2009



Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>1</b>	Delphi - MW 4 / Field Grab - Ground Water					
<i>end of Lab ID number 98669</i>						

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>2</b>	Delphi - MW 4 (3-grab lab comp) / Lab Composite - Ground Water					
Methane	170166 - 170168					
EPA 8015B	Methane		<b>5.28</b>	<b>mg/L</b>	MR	7/22/2009
cis-1,2-Dichloroethene	170169 - 170171					
EPA 624	cis-1,2-Dichloroethene		<b>41500</b>	<b>ug/L</b>	RS	7/22/2009
Tetrachloroethene	170169 - 170171					
EPA 624	Tetrachloroethene		<b>&lt;50</b>	<b>ug/L</b>	RS	7/22/2009
trans-1,2-Dichloroethene	170169 - 170171					
EPA 624	trans-1,2-Dichloroethene		<b>&lt;50</b>	<b>ug/L</b>	RS	7/22/2009
Trichloroethene	170169 - 170171					
EPA 624	Trichloroethene		<b>23000</b>	<b>ug/L</b>	RS	7/22/2009
Vinyl chloride	170169 - 170171					
EPA 624	Vinyl chloride		<b>6660</b>	<b>ug/L</b>	RS	7/22/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		<b>96</b>	<b>%</b>	RS	7/22/2009
	1,4-Difluorobenzene		<b>98</b>	<b>%</b>	RS	7/22/2009
	Chlorobenzene-d5		<b>100</b>	<b>%</b>	RS	7/22/2009
	Pentafluorobenzene		<b>96</b>	<b>%</b>	RS	7/22/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>2</b>	Delphi - MW 4 (3-grab lab comp) / Lab Composite - Ground Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>93</b>	%	RS	7/22/2009
	Dibromofluoromethane		<b>95</b>	%	RS	7/22/2009
	Toluene-d8		<b>96</b>	%	RS	7/22/2009

*end of Lab ID number 98670*

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>3</b>	Trip Blank / Lab Composite - Ground Water					
cis-1,2-Dichloroethene		170172				
EPA 624	cis-1,2-Dichloroethene		<5	ug/L	RS	7/22/2009
Tetrachloroethene		170172				
EPA 624	Tetrachloroethene		<5	ug/L	RS	7/22/2009
trans-1,2-Dichloroethene		170172				
EPA 624	trans-1,2-Dichloroethene		<5	ug/L	RS	7/22/2009
Trichloroethene		170172				
EPA 624	Trichloroethene		<5	ug/L	RS	7/22/2009
Vinyl chloride		170172				
EPA 624	Vinyl chloride		<5	ug/L	RS	7/22/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		92	%	RS	7/22/2009
	1,4-Difluorobenzene		97	%	RS	7/22/2009
	Chlorobenzene-d5		97	%	RS	7/22/2009
	Pentafluorobenzene		95	%	RS	7/22/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>3</b>	Trip Blank / Lab Composite - Ground Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>93</b>	%	RS	7/22/2009
	Dibromofluoromethane		<b>98</b>	%	RS	7/22/2009
	Toluene-d8		<b>97</b>	%	RS	7/22/2009

*end of Lab ID number 98671*



Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>4</b>	Delphi - MW 9 / Field Grab - Ground Water					
Chloride		170175				
EPA 300.0 Rev 2.1	Chloride		<b>3100</b>	<b>mg/L</b>	MR	7/22/2009
Nitrate (as N)		170175				
EPA 300.0 Rev 2.1	Nitrate (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Nitrite (as N)		170175				
EPA 300.0 Rev 2.1	Nitrite (as N)		<b>0.9</b>	<b>mg/L</b>	MR	7/22/2009
Sulfate (as SO4)		170175				
EPA 300.0 Rev 2.1	Sulfate (as SO4)		<b>379</b>	<b>mg/L</b>	MR	7/22/2009
Metals Dissolved - Delphi Groundwater		170176				
EPA 200.7 Rev 4.4	Iron, Soluble		<b>&lt;0.01</b>	<b>mg/L</b>	RVF	7/24/2009
EPA 200.7 Rev. 4.4	Magnesium - Soluble		<b>117</b>	<b>mg/L</b>	RVF	7/24/2009
EPA 200.7 Rev 4.4	Manganese, Soluble		<b>0.313</b>	<b>mg/L</b>	RVF	7/24/2009
	Potassium - Soluble		<b>19.0</b>	<b>mg/L</b>	RVF	7/24/2009
	Sodium - Soluble		<b>1600</b>	<b>mg/L</b>	RVF	7/24/2009
Alkalinity		170173				
SM 18-20 2320B (97)	Alkalinity		<b>290</b>	<b>mg/L</b>	RVF	7/24/2009
Ammonia (as N)		170174				
SM 18 4500-NH3 F or G	Ammonia (as N)		<b>0.26</b>	<b>mg/L</b>	MF	7/23/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	<b>Location / Description</b>					
<b>4</b>	Delphi - MW 9 / Field Grab - Ground Water					
Organic Carbon, Total		170174				
SM 18-21 5310B (00)	Organic Carbon, Total		<b>17</b>	<b>mg/L</b>	MF	7/22/2009
Sulfide (as S)		170177				
SM 18 4500-S E	Sulfide (as S)		<b>1.2</b>	<b>mg/L</b>	MF	7/23/2009
<i>end of Lab ID number 98672</i>						

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	<b>Location / Description</b>					
<b>5</b>	Delphi - MW 9 (3-grab lab comp) / Lab Composite - Ground Water					
Methane	170178 - 170180					
EPA 8015B	Methane		<b>0.032</b>	<b>mg/L</b>	MR	7/22/2009
cis-1,2-Dichloroethene	170181 - 170183					
EPA 624	cis-1,2-Dichloroethene		<b>1670</b>	<b>ug/L</b>	RS	7/23/2009
Tetrachloroethene	170181 - 170183					
EPA 624	Tetrachloroethene		<b>186</b>	<b>ug/L</b>	RS	7/23/2009
trans-1,2-Dichloroethene	170181 - 170183					
EPA 624	trans-1,2-Dichloroethene		<b>&lt;50</b>	<b>ug/L</b>	RS	7/23/2009
Trichloroethene	170181 - 170183					
EPA 624	Trichloroethene		<b>3290</b>	<b>ug/L</b>	RS	7/23/2009
Vinyl chloride	170181 - 170183					
EPA 624	Vinyl chloride		<b>&lt;50</b>	<b>ug/L</b>	RS	7/23/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		<b>91</b>	<b>%</b>	RS	7/22/2009
	1,4-Difluorobenzene		<b>96</b>	<b>%</b>	RS	7/22/2009
	Chlorobenzene-d5		<b>96</b>	<b>%</b>	RS	7/22/2009
	Pentafluorobenzene		<b>94</b>	<b>%</b>	RS	7/22/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	<b>Location / Description</b>					
<b>5</b>	Delphi - MW 9 (3-grab lab comp) / Lab Composite - Ground Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>90</b>	<b>%</b>	RS	7/22/2009
	Dibromofluoromethane		<b>95</b>	<b>%</b>	RS	7/22/2009
	Toluene-d8		<b>94</b>	<b>%</b>	RS	7/22/2009

end of Lab ID number 98673

<b>Sample ID</b>	<b>Location / Description</b>					
<b>6</b>	Trip Blank / Trip Blank - DI Water					
Methane		170184				
EPA 8015B	Methane		<b>&lt;0.004</b>	<b>mg/L</b>	MR	7/22/2009

end of Lab ID number 98674

*General Disclaimer*

- The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
- This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.
- These results pertain only to the items tested.
- This report shall not be reproduced except in full.
- If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.
- Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee will be charged for the return of any sample(s).
- Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

*The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.*

GZA GeoEnvironmental of New York			Annual Sampling Event						1 Sample / 11 Bottles						
Organization Name 535 Washington Street			Project Name						# of Samples / # of Bottles 10 - 14 business days						
Street Address Buffalo, NY 14203			Client PO / Release #						Turnaround / Date Results Needed NY 907087 17432						
City, State, ZIP Christopher Boron			Date Sampled						IsleChem Project #						
Contact Person Cell # 570-5990 844-7046 / 685-3629			Electronic reporting upon request please provide e-mail below: Email: christopher.boron@gza.com			*Alkalinity	Ammonia & TOC	Chloride, Nitrate, Nitrite, Sulfate	Fe, Mg, Mn, K, Na	Sulfide	Methane	* Volatiles - specific list below - 8260B	Are RUSH charges authorized? Yes No		
Phone# and Fax#			Matrix	Comp	Grab							Bottle Type / Preservative			
Sample ID	Sample Location														
170161	Delphi - MW 4		Groundwater		X	X	* Zero Headspace					250 ml Poly (None) - zero headspace			
170162	Delphi - MW 4		Groundwater		X	X						500 ml Poly (H2SO4)			
170163	Delphi - MW 4		Groundwater		X	X						500 ml Poly (None)			
170164	Delphi - MW 4		Groundwater		X	X			X	Metals to be filtered at IsleChem			500mL poly (None)		
170165	Delphi - MW 4		Groundwater		X	X			X			250mL poly (ZnAc,NaOH)			
170166	Delphi - MW 4		Groundwater		X	X	170167	170168		X		(3) 40 ml VOA (HCL) - zero headspace			
170169	Delphi - MW 4		Groundwater		X	X	170170	170171		X		(3) 40 ml VOA (HCL) - zero headspace			
170172	Trip Blank		DI Water							X		40 ml VOA (HCL)			
*Volatile List: Tetrachloroethylene, Trichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene and Vinyl chloride															
Bill to: Delphi Thermal System - Cathy Ver															
Sampled By Chris Boron			Date 7/20/09	Time 1220	Received by			Date	Time	IsleChem, LLC 2801 Long Road Grand Island, NY 14072 716-773-8401 Fax: 716-773-8517					
Relinquished by Chris Boron			Date 7/20/09	Time 3:25 pm	Received by lab Debra Scherman			Date 7/20/09	Time 3:25 pm						

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

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GZA GeoEnvironmental of New York Organization Name			Annual Sampling Event Project Name						1 sample / 11 bottles # of Samples / # of Bottles									
535 Washington Street Street Address									10 - 14 business days Turnaround / Date Results Needed									
Buffalo, NY 14203 City, State, ZIP			Date Sampled						NY 907087 17432 IsleChem Project #									
Christopher Boron Contact Person			Electronic reporting upon request please provide e-mail below: Email: christopher.boron@gza.com						Are RUSH charges authorized? Yes No Bottle Type / Preservative									
Cell # 570-5990 844-7046 / 685-3629 Phone# and Fax#			Matrix Comp Grab			*Alkalinity	Ammonia & TOC	Chloride, Nitrate, Nitrite, Sulfate	Fe, Dissolved Mg, Mn, K, Na	Sulfide	Methane	* Volatiles - specific list below - 8260B						
Sample ID	Sample Location																	
170173	Delphi - MW 9		Groundwater	X	X												250 ml Poly (None) - zero headspace	
170174	Delphi - MW 9		Groundwater	X		X											500 ml Poly (H2SO4)	
170175	Delphi - MW 9		Groundwater	X			X										500 ml Poly (None)	
170176	Delphi - MW 9		Groundwater	X				X									500mL poly (None)	
170177	Delphi - MW 9		Groundwater	X					X								250mL poly (ZnAc, NaOH)	
170178	Delphi - MW 9		Groundwater	X		170179	170180			X							(3) 40 ml VOA (HCL) - zero headspace	
170181	Delphi - MW 9		Groundwater	X		170182	170183				X						(3) 40 ml VOA (HCL) - zero headspace	
170184	Trip Blank		DI Water								X						40 ml VOA (HCL)	
*Volatile List: Tetrachloroethylene, Trichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene and Vinyl chloride																		
Bill to: Delphi Thermal System - Cathy Ver																		
Sampled By Chris Boron			Date 7/24/09	Time	Received by			Date 7/24/09	Time 3:25 pm	IsleChem, LLC 2801 Long Road Grand Island, NY 14072 716-773-8401 Fax: 716-773-8517								
Relinquished by Chris Boron			Date 7/24/09	Time 3:25 pm	Received by/lab Helen Schuman			Date 7/24/09	Time 3:25 pm									

by relinquishing these sample to IsleChem, LLC. you are accepting the current IsleChem, LLC terms and conditions for the sale of services

Chain of Custody

# Delphi Thermal Systems

## Attachment 1

Delphi Thermal Systems – Monitoring Wells 4 and 9 – Submission date 7/20/09

QC Summary for EPA200.7 Rev. 4.4 - Metals  
 EPA 300.0 Rev 2.1 – Anions  
 SM18-20 2320B - Alkalinity  
 SM18 4500-NH3 – Ammonia  
 SM18-21 5310B – Organic Carbon  
 EPA 376.1 – Sulfide as S  
 EPA 8015B - Methane

	Lab Results	Lab Duplicate	Duplicate Evaluation	Method Blank	Lab Control Sample	Matrix Spike
<b>Metals - Dissolved</b>						
	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>% RPD</b>	<b>(mg/L)</b>	<b>(%rec )</b>	<b>(% rec)</b>
Iron	N/A	N/A	N/A	<0.01	101	102
Magnesium	N/A	N/A	N/A	<0.05	101	101
Manganese	N/A	N/A	N/A	<0.01	111	107
Potassium	N/A	N/A	N/A	<0.05	92.0	105
Sodium	N/A	N/A	N/A	<0.01	93.5	See Note 1
<b>Wet Chemistry</b>						
Alkalinity	300	300	0	N/A	N/A	N/A
Ammonia	1.28	1.28	0	N/A	109	101
Organic Carbon, Total	16	16	0	<4.0	101	102
Sulfide	2.0	2.0	0	N/A	N/A	N/A
<b>Anions</b>						
Chloride	271	253	7	<0.1	102	104
Nitrate	<3	<3	0	<0.03	100	108
Nitrite	<3	<3	0	<0.03	100	105
Sulfate	130	116	11	<0.1	101	104
<b>Organics</b>						
Methane	5.28	6.15	15	<0.004	95	73

Note 1 – spike lost due to sample dilution

# Delphi Thermal Systems

## Attachment 2

### Delphi Thermal Systems – Monitoring Wells 4 and 9

QC Summary for EPA624 Purgeable Organics – Surrogate and Internal Standard Recovery

ID:	Lab Duplicate	Method Blank	Lab Control Sample	Matrix Spike	Matrix Spike Dup.	Acceptance Criteria <sup>1</sup>
Lab ID:						
<b>Surrogates</b>						
Bromofluorobenzene	92	92	92	95	95	85 - 136
Dibromofluoromethane	95	92	92	92	91	86 - 144
Toluene-d8	95	95	95	95	95	85 - 138
<b>Internal Standards</b>						
Chlorobenzene-d5	99	103	102	99	98	50 - 200
Pentafluorobenzene	94	100	101	100	99	50 - 200
1,4-Dichlorobenzene-d4	93	101	101	100	100	50 - 200
1,4-Difluorobenzene	96	100	101	100	98	50 - 200

1 – Acceptance Criteria values apply to surrogate recoveries.

## IsleChem, LLC Analysis Report

Client: Christopher Boron  
 GZA GeoEnvironmental of New York  
 535 Washington Street

Project: **Water Samples for Analysis**  
 Annual Sampling Event  
 Delphi Thermal Systems

Buffalo, NY 14203

Report Date: Monday, August 10, 2009

Phase:

Report ID: **NY907087.0.17375**

Batch: --

PO# / Release# /

Contact: Christopher Boron

Reference #:

Sample Date: **Wednesday, July 15, 2009**

Authorized Signature:



Sample Time:  Check indicates Time Sampled was NOT provided

Richard V. Finn, Manager of Chemical Testing

Report Status: **Final**

*The following result table is for 8 samples received by IsleChem LLC on 07/16/2009 submitted by Client  
 Also enclosed is the paperwork submitted with the samples.*

Notes:

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	<b>Location / Description</b>					
<b>087-0715-01</b>	Delphi MW 7 / Field Grab - Ground Water					
Chloride		169808				
EPA 300.0 Rev 2.1	Chloride		<b>452</b>	<b>mg/L</b>	MR	7/22/2009
Nitrate (as N)		169808				
EPA 300.0 Rev 2.1	Nitrate (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	<b>Location / Description</b>					
<b>087-0715-01</b>	Delphi MW 7 / Field Grab - Ground Water					
Nitrite (as N)		169808				
EPA 300.0 Rev 2.1	Nitrite (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Sulfate (as SO4)		169808				
EPA 300.0 Rev 2.1	Sulfate (as SO4)		<b>460</b>	<b>mg/L</b>	MR	7/22/2009
Delphi Dissolved Metals		169809				
EPA 200.7 Rev 4.4	Iron, Soluble		<b>0.030</b>	<b>mg/L</b>	RVF	7/24/2009
	Magnesium, Soluble		<b>84.9</b>	<b>mg/L</b>	RVF	7/24/2009
	Manganese, Soluble		<b>0.032</b>	<b>mg/L</b>	RVF	7/24/2009
	Potassium, Soluble		<b>24.1</b>	<b>mg/L</b>	RVF	7/24/2009
	Sodium, Soluble		<b>230</b>	<b>mg/L</b>	RVF	7/24/2009
Alkalinity		169806				
SM 18-20 2320B (97)	Alkalinity		<b>310</b>	<b>mg/L</b>	RVF	7/24/2009
Ammonia (as N)		169807				
SM 18 4500-NH3 F or G	Ammonia (as N)		<b>1.28</b>	<b>mg/L</b>	MF	7/23/2009
Organic Carbon, Total		169807				
SM 18-21 5310B (00)	Organic Carbon, Total		<b>28</b>	<b>mg/L</b>	MF	7/22/2009
Sulfide (as S)		169810				
SM 18 4500-S E	Sulfide (as S)		<b>2.4</b>	<b>mg/L</b>	MF	7/20/2009



Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-01</b>	Delphi MW 7 / Field Grab - Ground Water					
<i>end of Lab ID number 98377</i>						

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-02</b>	Delphi MW 7 (3-grab lab comp) / Lab Composite - Ground Water					
Methane	169811 - 169813					
EPA 8015B	Methane		<b>0.072</b>	<b>mg/L</b>	MR	7/21/2009
cis-1,2-Dichloroethene	169814 - 169816					
EPA 624	cis-1,2-Dichloroethene		<b>58200</b>	<b>ug/L</b>	RS	7/21/2009
Tetrachloroethene	169814 - 169816					
EPA 624	Tetrachloroethene		<b>112</b>	<b>ug/L</b>	RS	7/21/2009
trans-1,2-Dichloroethene	169814 - 169816					
EPA 624	trans-1,2-Dichloroethene		<b>107</b>	<b>ug/L</b>	RS	7/21/2009
Trichloroethene	169814 - 169816					
EPA 624	Trichloroethene		<b>618000</b>	<b>ug/L</b>	RS	7/21/2009
Vinyl chloride	169814 - 169816					
EPA 624	Vinyl chloride		<b>2450</b>	<b>ug/L</b>	RS	7/21/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		<b>91</b>	<b>%</b>	RS	7/21/2009
	1,4-Difluorobenzene		<b>96</b>	<b>%</b>	RS	7/21/2009
	Chlorobenzene-d5		<b>96</b>	<b>%</b>	RS	7/21/2009
	Pentafluorobenzene		<b>94</b>	<b>%</b>	RS	7/21/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b> <b>087-0715-02</b>	Location / Description Delphi MW 7 (3-grab lab comp) / Lab Composite - Ground Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>92</b>	<b>%</b>	RS	7/21/2009
	Dibromofluoromethane		<b>97</b>	<b>%</b>	RS	7/21/2009
	Toluene-d8		<b>96</b>	<b>%</b>	RS	7/21/2009
<i>end of Lab ID number 98378</i>						
<b>Sample ID</b> <b>087-0715-03</b>	Location / Description Trip Blank / Trip Blank - DI Water					
Methane		169817				
EPA 8015B	Methane		<b>&lt;0.004</b>	<b>mg/L</b>	MR	7/21/2009
<i>end of Lab ID number 98379</i>						

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b> <b>087-0715-04</b>	Location / Description					
	Delphi MW 8 / Field Grab - Ground Water					
Chloride		169820				
EPA 300.0 Rev 2.1	Chloride		<b>457</b>	<b>mg/L</b>	MR	7/22/2009
Nitrate (as N)		169820				
EPA 300.0 Rev 2.1	Nitrate (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Nitrite (as N)		169820				
EPA 300.0 Rev 2.1	Nitrite (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Sulfate (as SO4)		169820				
EPA 300.0 Rev 2.1	Sulfate (as SO4)		<b>588</b>	<b>mg/L</b>	MR	7/22/2009
Delphi Dissolved Metals		169821				
EPA 200.7 Rev 4.4	Iron, Soluble		<b>0.028</b>	<b>mg/L</b>	RVF	7/24/2009
	Magnesium, Soluble		<b>102</b>	<b>mg/L</b>	RVF	7/24/2009
	Manganese, Soluble		<b>0.395</b>	<b>mg/L</b>	RVF	7/24/2009
	Potassium, Soluble		<b>15.7</b>	<b>mg/L</b>	RVF	7/24/2009
	Sodium, Soluble		<b>246</b>	<b>mg/L</b>	RVF	7/24/2009
Alkalinity		169818				
SM 18-20 2320B (97)	Alkalinity		<b>300</b>	<b>mg/L</b>	RVF	7/24/2009
Ammonia (as N)		169819				
SM 18 4500-NH3 F or G	Ammonia (as N)		<b>0.76</b>	<b>mg/L</b>	MF	7/23/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	<b>Location / Description</b>					
<b>087-0715-04</b>	Delphi MW 8 / Field Grab - Ground Water					
Organic Carbon, Total		169819				
SM 18-21 5310B (00)	Organic Carbon, Total		<b>22</b>	<b>mg/L</b>	MF	7/22/2009
Sulfide (as S)		169822				
SM 18 4500-S E	Sulfide (as S)		<b>2.0</b>	<b>mg/L</b>	MF	7/20/2009
<i>end of Lab ID number 98380</i>						

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-05</b>	Delphi MW 8 (3-grab lab comp) / Lab Composite - Ground Water					
Methane	169823 - 169825					
EPA 8015B	Methane		<b>0.086</b>	<b>mg/L</b>	MR	7/21/2009
cis-1,2-Dichloroethene	169826 - 169828					
EPA 624	cis-1,2-Dichloroethene		<b>859</b>	<b>ug/L</b>	RS	7/20/2009
Tetrachloroethene	169826 - 169828					
EPA 624	Tetrachloroethene		<b>5.4</b>	<b>ug/L</b>	RS	7/20/2009
trans-1,2-Dichloroethene	169826 - 169828					
EPA 624	trans-1,2-Dichloroethene		<b>6.3</b>	<b>ug/L</b>	RS	7/20/2009
Trichloroethene	169826 - 169828					
EPA 624	Trichloroethene		<b>50.2</b>	<b>ug/L</b>	RS	7/20/2009
Vinyl chloride	169826 - 169828					
EPA 624	Vinyl chloride		<b>98.1</b>	<b>ug/L</b>	RS	7/20/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		<b>91</b>	<b>%</b>	RS	7/20/2009
	1,4-Difluorobenzene		<b>93</b>	<b>%</b>	RS	7/20/2009
	Chlorobenzene-d5		<b>92</b>	<b>%</b>	RS	7/20/2009
	Pentafluorobenzene		<b>89</b>	<b>%</b>	RS	7/20/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-05</b>	Delphi MW 8 (3-grab lab comp) / Lab Composite - Ground Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>94</b>	%	RS	7/20/2009
	Dibromofluoromethane		<b>94</b>	%	RS	7/20/2009
	Toluene-d8		<b>98</b>	%	RS	7/20/2009

*end of Lab ID number 98381*



Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-06</b>	Trip Blank / Trip Blank - DI Water					
cis-1,2-Dichloroethene		169829				
EPA 624	cis-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
Tetrachloroethene		169829				
EPA 624	Tetrachloroethene		<5.0	ug/L	RS	7/21/2009
trans-1,2-Dichloroethene		169829				
EPA 624	trans-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
Trichloroethene		169829				
EPA 624	Trichloroethene		<5.0	ug/L	RS	7/21/2009
Vinyl chloride		169829				
EPA 624	Vinyl chloride		<5.0	ug/L	RS	7/21/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		98	%	RS	7/21/2009
	1,4-Difluorobenzene		102	%	RS	7/21/2009
	Chlorobenzene-d5		103	%	RS	7/21/2009
	Pentafluorobenzene		102	%	RS	7/21/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b> <b>087-0715-06</b>	Location / Description					
	Trip Blank / Trip Blank - DI Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>93</b>	%	RS	7/21/2009
	Dibromofluoromethane		<b>98</b>	%	RS	7/21/2009
	Toluene-d8		<b>97</b>	%	RS	7/21/2009

*end of Lab ID number 98382*

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-07</b>	Delphi MW 10 / Field Grab - Ground Water					
Chloride		169832				
EPA 300.0 Rev 2.1	Chloride		<b>4260</b>	<b>mg/L</b>	MR	7/22/2009
Nitrate (as N)		169832				
EPA 300.0 Rev 2.1	Nitrate (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Nitrite (as N)		169832				
EPA 300.0 Rev 2.1	Nitrite (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Sulfate (as SO4)		169832				
EPA 300.0 Rev 2.1	Sulfate (as SO4)		<b>265</b>	<b>mg/L</b>	MR	7/22/2009
Delphi Dissolved Metals		169833				
EPA 200.7 Rev 4.4	Iron, Soluble		<b>0.078</b>	<b>mg/L</b>	RVF	7/24/2009
	Magnesium, Soluble		<b>103</b>	<b>mg/L</b>	RVF	7/24/2009
	Manganese, Soluble		<b>2.57</b>	<b>mg/L</b>	RVF	7/24/2009
	Potassium, Soluble		<b>20.6</b>	<b>mg/L</b>	RVF	7/24/2009
	Sodium, Soluble		<b>1950</b>	<b>mg/L</b>	RVF	7/24/2009
Alkalinity		169830				
SM 18-20 2320B (97)	Alkalinity		<b>320</b>	<b>mg/L</b>	RVF	7/24/2009
Ammonia (as N)		169831				
SM 18 4500-NH3 F or G	Ammonia (as N)		<b>0.27</b>	<b>mg/L</b>	MF	7/23/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-07</b>	Delphi MW 10 / Field Grab - Ground Water					
Organic Carbon, Total		169831				
SM 18-21 5310B (00)	Organic Carbon, Total		<b>9.1</b>	<b>mg/L</b>	MF	7/22/2009
Sulfide (as S)		169834				
SM 18 4500-S E	Sulfide (as S)		<b>0.80</b>	<b>mg/L</b>	MF	7/20/2009
<i>end of Lab ID number 98383</i>						

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-08</b>	Delphi MW 10 (3-grab lab comp) / Lab Composite - Ground Water					
Methane		169835 - 169837				
EPA 8015B	Methane		<b>0.348</b>	<b>mg/L</b>	MR	7/21/2009
cis-1,2-Dichloroethene		169838 - 169840				
EPA 624	cis-1,2-Dichloroethene		<b>248</b>	<b>ug/L</b>	RS	7/20/2009
Tetrachloroethene		169838 - 169840				
EPA 624	Tetrachloroethene		<b>115</b>	<b>ug/L</b>	RS	7/20/2009
trans-1,2-Dichloroethene		169838 - 169840				
EPA 624	trans-1,2-Dichloroethene		<b>&lt;5.0</b>	<b>ug/L</b>	RS	7/20/2009
Trichloroethene		169838 - 169840				
EPA 624	Trichloroethene		<b>74.6</b>	<b>ug/L</b>	RS	7/20/2009
Vinyl chloride		169838 - 169840				
EPA 624	Vinyl chloride		<b>43.5</b>	<b>ug/L</b>	RS	7/20/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		<b>104</b>	<b>%</b>	RS	7/20/2009
	1,4-Difluorobenzene		<b>111</b>	<b>%</b>	RS	7/20/2009
	Chlorobenzene-d5		<b>105</b>	<b>%</b>	RS	7/20/2009
	Pentafluorobenzene		<b>110</b>	<b>%</b>	RS	7/20/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b> <b>087-0715-08</b>	Location / Description					
	Delphi MW 10 (3-grab lab comp) / Lab Composite - Ground Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>93</b>	%	RS	7/20/2009
	Dibromofluoromethane		<b>96</b>	%	RS	7/20/2009
	Toluene-d8		<b>94</b>	%	RS	7/20/2009

*end of Lab ID number 98384*

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-09</b>	Trip Blank / Trip Blank - DI Water					
cis-1,2-Dichloroethene		169841				
EPA 624	cis-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
	cis-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
Tetrachloroethene		169841				
EPA 624	Tetrachloroethene		<5.0	ug/L	RS	7/21/2009
trans-1,2-Dichloroethene		169841				
EPA 624	trans-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
Trichloroethene		169841				
EPA 624	Trichloroethene		<5.0	ug/L	RS	7/21/2009
Vinyl chloride		169841				
EPA 624	Vinyl chloride		<5.0	ug/L	RS	7/22/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		98	%	RS	7/21/2009
	1,4-Difluorobenzene		103	%	RS	7/21/2009
	Chlorobenzene-d5		104	%	RS	7/21/2009
	Pentafluorobenzene		102	%	RS	7/21/2009



Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b> <b>087-0715-09</b>	Location / Description					
	Trip Blank / Trip Blank - DI Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>92</b>	%	RS	7/21/2009
	Dibromofluoromethane		<b>97</b>	%	RS	7/21/2009
	Toluene-d8		<b>95</b>	%	RS	7/21/2009

*end of Lab ID number 98385*

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-10</b>	Delphi MW Dup / Field Duplicate - Ground Water					
Chloride		169844				
EPA 300.0 Rev 2.1	Chloride		<b>4100</b>	<b>mg/L</b>	MR	7/22/2009
Nitrate (as N)		169844				
EPA 300.0 Rev 2.1	Nitrate (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Nitrite (as N)		169844				
EPA 300.0 Rev 2.1	Nitrite (as N)		<b>&lt;0.6</b>	<b>mg/L</b>	MR	7/22/2009
Sulfate (as SO4)		169844				
EPA 300.0 Rev 2.1	Sulfate (as SO4)		<b>276</b>	<b>mg/L</b>	MR	7/22/2009
Delphi Dissolved Metals		169845				
EPA 200.7 Rev 4.4	Iron, Soluble		<b>0.018</b>	<b>mg/L</b>	RVF	7/24/2009
	Magnesium, Soluble		<b>104</b>	<b>mg/L</b>	RVF	7/24/2009
	Manganese, Soluble		<b>2.63</b>	<b>mg/L</b>	RVF	7/24/2009
	Potassium, Soluble		<b>21.0</b>	<b>mg/L</b>	RVF	7/24/2009
	Sodium, Soluble		<b>1900</b>	<b>mg/L</b>	RVF	7/24/2009
Alkalinity		169842				
SM 18-20 2320B (97)	Alkalinity		<b>330</b>	<b>mg/L</b>	RVF	7/24/2009
Ammonia (as N)		169843				
SM 18 4500-NH3 F or G	Ammonia (as N)		<b>0.22</b>	<b>mg/L</b>	MF	7/23/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-10</b>	Delphi MW Dup / Field Duplicate - Ground Water					
Organic Carbon, Total		169843				
SM 18-21 5310B (00)	Organic Carbon, Total		<b>33</b>	<b>mg/L</b>	MF	7/22/2009
Sulfide (as S)		169846				
SM 18 4500-S E	Sulfide (as S)		<b>0.80</b>	<b>mg/L</b>	MF	7/20/2009
<i>end of Lab ID number 98386</i>						

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-11</b>	Delphi MW Dup (3-grab lab comp) / Lab Composite - Ground Water					
Methane	169847 - 169849					
EPA 8015B	Methane		<b>0.357</b>	<b>mg/L</b>	MR	7/21/2009
cis-1,2-Dichloroethene	169850 - 169852					
EPA 624	cis-1,2-Dichloroethene		<b>275</b>	<b>ug/L</b>	RS	7/20/2009
Tetrachloroethene	169850 - 169852					
EPA 624	Tetrachloroethene		<b>118</b>	<b>ug/L</b>	RS	7/20/2009
trans-1,2-Dichloroethene	169850 - 169852					
EPA 624	trans-1,2-Dichloroethene		<b>&lt;5.0</b>	<b>ug/L</b>	RS	7/20/2009
Trichloroethene	169850 - 169852					
EPA 624	Trichloroethene		<b>78.9</b>	<b>ug/L</b>	RS	7/20/2009
Vinyl chloride	169850 - 169852					
EPA 624	Vinyl chloride		<b>39.2</b>	<b>ug/L</b>	RS	7/20/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		<b>90</b>	<b>%</b>	RS	7/20/2009
	1,4-Difluorobenzene		<b>91</b>	<b>%</b>	RS	7/20/2009
	Chlorobenzene-d5		<b>90</b>	<b>%</b>	RS	7/20/2009
	Pentafluorobenzene		<b>89</b>	<b>%</b>	RS	7/20/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b> <b>087-0715-11</b>	Location / Description					
	Delphi MW Dup (3-grab lab comp) / Lab Composite - Ground Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>94</b>	%	RS	7/20/2009
	Dibromofluoromethane		<b>94</b>	%	RS	7/20/2009
	Toluene-d8		<b>97</b>	%	RS	7/20/2009

*end of Lab ID number 98387*

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b>	Location / Description					
<b>087-0715-12</b>	Trip Blank / Trip Blank - DI Water					
cis-1,2-Dichloroethene		169853				
EPA 624	cis-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
	cis-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
Tetrachloroethene		169853				
EPA 624	Tetrachloroethene		<5.0	ug/L	RS	7/21/2009
trans-1,2-Dichloroethene		169853				
EPA 624	trans-1,2-Dichloroethene		<5.0	ug/L	RS	7/21/2009
Trichloroethene		169853				
EPA 624	Trichloroethene		<5.0	ug/L	RS	7/21/2009
Vinyl chloride		169853				
EPA 624	Vinyl chloride		<5.0	ug/L	RS	7/22/2009
Volatiles - Internal Standards						
EPA 624	1,4-Dichlorobenzene-d14		97	%	RS	7/21/2009
	1,4-Difluorobenzene		103	%	RS	7/21/2009
	Chlorobenzene-d5		103	%	RS	7/21/2009
	Pentafluorobenzene		101	%	RS	7/21/2009

Analyte Group / Method	Analyte	Vessel ID	Results	Units	Analyst	Date
<b>Sample ID</b> <b>087-0715-12</b>	Location / Description					
	Trip Blank / Trip Blank - DI Water					
Volatiles - Surrogates						
EPA 624	Bromofluorobenzene		<b>96</b>	%	RS	7/21/2009
	Dibromofluoromethane		<b>101</b>	%	RS	7/21/2009
	Toluene-d8		<b>99</b>	%	RS	7/21/2009

end of Lab ID number 98388

*General Disclaimer*

- The test results are submitted pursuant to IsleChem LLC's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
- This report is issued for the benefit of and may be relied upon by the client named above. The client bears full responsibility for deciding the level of testing for sample submitted to IsleChem LLC.
- These results pertain only to the items tested.
- This report shall not be reproduced except in full.
- If the sample(s) represented by these test results were not collected by IsleChem LLC then the test results are limited to the reported values determine by the analytical testing process. IsleChem LLC makes no representation regarding the sample's collection technique, condition, volume, homogeneity or any other aspect of the sample(s) prior to IsleChem LLC taking possession of the sample(s) and the influence it may have on the results.
- Unless notified in writing to return the samples covered by this report IsleChem LLC will store what remains of the sample(s), if anything, for a period of 60 days before discarding, unless otherwise required by law. A shipping and handling fee with be charged for the return of any sample(s).
- Certain analytes may not be covered by the NYS DOH or NELAP fields of accreditation. Results for those analytes are generated by the cited method using QA/QC guidelines from IsleChem's Quality Control Manual, where applicable.

*The test results in this report meet all NELAP requirements for parameters that are within IsleChem's field of accreditation. Any exceptions to NELAP requirements are noted in the comments field.*

# Delphi Thermal Systems

## Attachment 1

Delphi Thermal Systems – Monitoring Wells 7 thru 15 – Submission dates 7/15/09 &  
7/16/09

QC Summary for EPA200.7 Rev. 4.4 - Metals  
EPA 300.0 Rev 2.1 – Anions  
SM18-20 2320B - Alkalinity  
SM18 4500-NH3 – Ammonia  
SM18-21 5310B – Organic Carbon  
EPA 376.1 – Sulfide as S  
EPA 8015B – Methane

	Lab Results	Lab Duplicate	Duplicate Evaluation	Method Blank	Lab Control Sample	Matrix Spike
<b>Metals - Dissolved</b>						
	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>% RPD</b>	<b>(mg/L)</b>	<b>(%rec )</b>	<b>(% rec)</b>
Iron	N/A	N/A	N/A	<0.01	101	102
Magnesium	N/A	N/A	N/A	<0.05	101	101
Manganese	N/A	N/A	N/A	<0.01	111	107
Potassium	N/A	N/A	N/A	<0.05	92.0	105
Sodium	N/A	N/A	N/A	<0.01	93.5	See Note 1
<b>Wet Chemistry</b>						
Alkalinity	300	300	0	N/A	N/A	N/A
Ammonia	1.28	1.28	0	N/A	109	101
Organic Carbon, Total	16	16	0	<4.0	101	102
Sulfide	2.0	2.0	0	N/A	N/A	N/A
<b>Anions</b>						
Chloride	452	432	5	<0.1	103	See note 2
Nitrate	<0.6	<0.6	0	<0.03	105	108
Nitrite	<0.6	<0.6	0	<0.03	96	105
Sulfate	460	443	4	<0.1	104	See note 2
<b>Organics</b>						
Methane	0.072	0.078	8.0	<0.004	86	88

Note 1 – spike lost due to sample dilution

Note 2 – spike levels not appropriate relative to native sample concentration



# Delphi Thermal Systems

IsleChem LLC  
2801 Long Road  
Grand Island, NY 14072

Project ID: NY907087  
Batch IDs: 17375, 17376

GZA GeoEnvironmental of New York			Annual Sampling Event				11 bottles																																		
Organization Name 535 Washington Street			Project Name				# of Samples / # of Bottles 10 - 14 business days																																		
Street Address Buffalo, NY 14203			Client PO / Release # 7/15/09				Turnaround / Date Results Needed 17907087 17375																																		
City, State, ZIP Buffalo, NY 14203			Date Sampled				IsleChem Project #																																		
Contact Person Christopher Boron			Electronic reporting upon request please provide e-mail below. Email: christopher.boron@gza.com				Are RUSH charges authorized? Yes No																																		
Phone# and Fax# Cell # 570-5990 844-7046 / 685-3629			Matrix				Bottle Type / Preservative																																		
Sample ID			Sample Location			Matrix			Comp			Grab			*Alkalinity			Ammonia & TOC			Chloride, Nitrate, Nitrite, Sulfate			Dissolved: Fe, Mg, Mn, K, Na			Sulfide			Methane			* Volatiles - specific list below - 8260B			Bottle Type / Preservative					
169806			Delphi - MW 7			Groundwater									X																		* Zero Headspace			250 ml Poly (None) - zero headspace					
169807			Delphi - MW 7			Groundwater												X																		500 ml Poly (H2SO4)					
169808			Delphi - MW 7			Groundwater															X															500 ml Poly (None)					
169809			Delphi - MW 7			Groundwater															X												Metals to be filtered at IsleChem			500mL poly (HNO3)					
169810			Delphi - MW 7			Groundwater															X															250mL poly (ZnAc, NaOH)					
169811			Delphi - MW 7			Groundwater			169812			169813												X												(3) 40 ml VOA (HCL) - zero headspace					
169814			Delphi - MW 7			Groundwater			169815			169816															X									(3) 40 ml VOA (HCL) - zero headspace					
169817			Trip Blank			DI Water																														X			40 ml VOA (HCL)		
*Volatile List: Tetrachloroethylene, Trichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene and Vinyl chloride																																									
Bill to: Delphi Thermal System - Cathy Ver																																									
Sampled By			Date			Time			Received by			Date			Time			IsleChem, LLC 2801 Long Road Grand Island, NY 14072 716-773-8401 Fax: 716-773-8517																							
Relinquished by			Date			Time			Received by lab			Date			Time																										
[Signature]			7/15/09			15:45			[Signature]			7/15/09			4:25 pm																										
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Sampled By: [Signature]  
 Relinquished by: [Signature]  
 Date: 7/15/09  
 Time: 15:45  
 Received by: [Signature]  
 Received by lab: [Signature]  
 Date: 7/15/09  
 Time: 16:20

GZA GeoEnvironmental of New York			Annual Sampling Event						11 bottles					
Organization Name 535 Washington Street			Project Name						# of Samples / # of Bottles					
Street Address Buffalo, NY 14203			Client PO / Release # 7/15/09						10 - 14 business days					
City, State, ZIP Christopher Boron			Date Sampled						Turnaround / Date Results Needed 17907087					
Contact Person Cell # 570-5990 844-7046 / 685-3629			Electronic reporting upon request please provide e-mail below. Email: christopher.boron@gza.com						IsleChem Project # 17375					
Phone# and Fax#			Matrix			Comp			Grab					
Sample ID			Sample Location			*Alkalinity			Ammonia & TOC					
						Chloride, Nitrate, Nitrite, Sulfate			Fe, Mg, Mn, K, Na					
						Sulfide			Methane					
						* Volatiles - specific list below - 8260B			Are RUSH charges authorized?					
									Yes No					
									Bottle Type / Preservative					
169818	Delphi - MW 8	Groundwater			X	* Zero Headspace			250 ml Poly (None) - zero headspace					
169819	Delphi - MW 8	Groundwater				X				500 ml Poly (H2SO4)				
169820	Delphi - MW 8	Groundwater				X				500 ml Poly (None)				
169821	Delphi - MW 8	Groundwater				X	Metals to be filtered at IsleChem			500mL poly (HNO3)				
169822	Delphi - MW 8	Groundwater				X				250mL poly (ZnAc,NaOH)				
169823	Delphi - MW 8	Groundwater	169824	169825			X				(3) 40 ml VOA (HCL) - zero headspace			
169826	Delphi - MW 8	Groundwater	169827	169828				X				(3) 40 ml VOA (HCL) - zero headspace		
169829	Trip Blank	DI Water						X				40 ml VOA (HCL)		
*Volatile List: Tetrachloroethylene, Trichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene and Vinyl chloride														
Bill to: Delphi Thermal System - Cathy Ver														
Sampled By <i>[Signature]</i>		Date 7/15/09	Time	Received by <i>[Signature]</i>		Date 7/15/09	Time 1545	IsleChem, LLC 2801 Long Road Grand Island, NY 14072 716-773-8401 Fax: 716-773-8517						
Relinquished by <i>[Signature]</i>		Date 7/15/09	Time 15:45	Received by lab Kevin A. Kader		Date 7/15/09	Time 425pm							

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Chain of Custody

7/15/09 1620

GZA GeoEnvironmental of New York Organization Name		Annual Sampling Event Project Name				11 Bottles # of Samples / # of Bottles														
535 Washington Street Street Address		7/15/09 Client PO / Release #				10 - 14 business days Turnaround / Date Results Needed														
Buffalo, NY 14203 City, State, ZIP		7/15/09 Date Sampled				P4907087 17375 IsleChem Project #														
Christopher Boron Contact Person		Electronic reporting upon request please provide e-mail below. Email: christopher.boron@gza.com				Are RUSH charges authorized?  Yes No														
Cell # 570-5990 844-7046 / 685-3629 Phone# and Fax#		Matrix Comp Grab				Bottle Type / Preservative														
Sample ID	Sample Location				*Alkalinity	Ammonia & TOC	Chloride, Nitrate, Nitrite, Sulfate	Fe, Dissolved: Mg, Mn, K, Na	Sulfide	Methane	* Volatiles - specific list below - 8260B									
169830	Delphi - MW 10	Groundwater			X													* Zero Headspace	250 ml Poly (None) - zero headspace	
169831	Delphi - MW 10	Groundwater				X													500 ml Poly (H2SO4)	
169832	Delphi - MW 10	Groundwater					X												500 ml Poly (None)	
169833	Delphi - MW 10	Groundwater						X											Metals to be filtered at IsleChem	500mL poly (HNO3)
169834	Delphi - MW 10	Groundwater							X											250mL poly (ZnAc,NaOH)
169835	Delphi - MW 10	Groundwater	169836	169837						X										(3) 40 ml VOA (HCL) - zero headspace
169838	Delphi - MW 10	Groundwater	169839	169840							X									(3) 40 ml VOA (HCL) - zero headspace
169841	Trip Blank	DI Water									X									40 ml VOA (HCL)
*Volatile List: Tetrachloroethylene, Trichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene and Vinyl chloride																				
													Bill to: Delphi Thermal System - Cathy Ver							
Sampled by <i>[Signature]</i>		Date 7/15/09	Time 15:45	Received by <i>[Signature]</i>		Date 7/15/09	Time 15:45					IsleChem, LLC 2801 Long Road Grand Island, NY 14072 716-773-8401 Fax: 716-773-8517								
Relinquished by <i>[Signature]</i>		Date 7/15/09	Time 15:45	Received by Lab Kevin A. Kelly		Date 7/15/09	Time 4:25 pm													

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Chain of Custody

GZA GeoEnvironmental of New York			Annual Sampling Event				11 bottles						
Organization Name 535 Washington Street			Project Name				# of Samples / # of Bottles 10 - 14 business days						
Street Address Buffalo, NY 14203			Client PO / Release # 7/15/09				Turnaround / Date Results Needed M4907087 17375						
City, State, ZIP Christopher Boron			Date Sampled				IsleChem Project #						
Contact Person Cell # 570-5990 844-7046 / 685-3629			Electronic reporting upon request please provide e-mail below. Email: christopher.boron@gza.com				Are RUSH charges authorized? Yes No						
Phone# and Fax#			Matrix				Bottle Type / Preservative						
Sample ID			Sample Location				IsleChem Project #						
169842			Delphi - MW Dup				250 ml Poly (None) - zero headspace						
169843			Delphi - MW Dup				500 ml Poly (H2SO4)						
169844			Delphi - MW Dup				500 ml Poly (None)						
169845			Delphi - MW Dup				500mL poly (HNO3)						
169846			Delphi - MW Dup				250mL poly (ZnAc, NaOH)						
169847			Delphi - MW Dup				(3) 40 ml VOA (HCL) - zero headspace						
169850			Delphi - MW Dup				(3) 40 ml VOA (HCL) - zero headspace						
169853			Trip Blank				40 ml VOA (HCL)						
*Volatile List: Tetrachloroethylene, Trichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene and Vinyl chloride													
Bill to: Delphi Thermal System - Cathy Ver													
Sampled By			Date		Time		Received by			Date		Time	
Relinquished by			Date		Time		Received by Lab			Date		Time	

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Chain of Custody